

GRAND RAPIDS FLORA

A

CATALOGUE

OF THE

Flowering Plants and Ferns

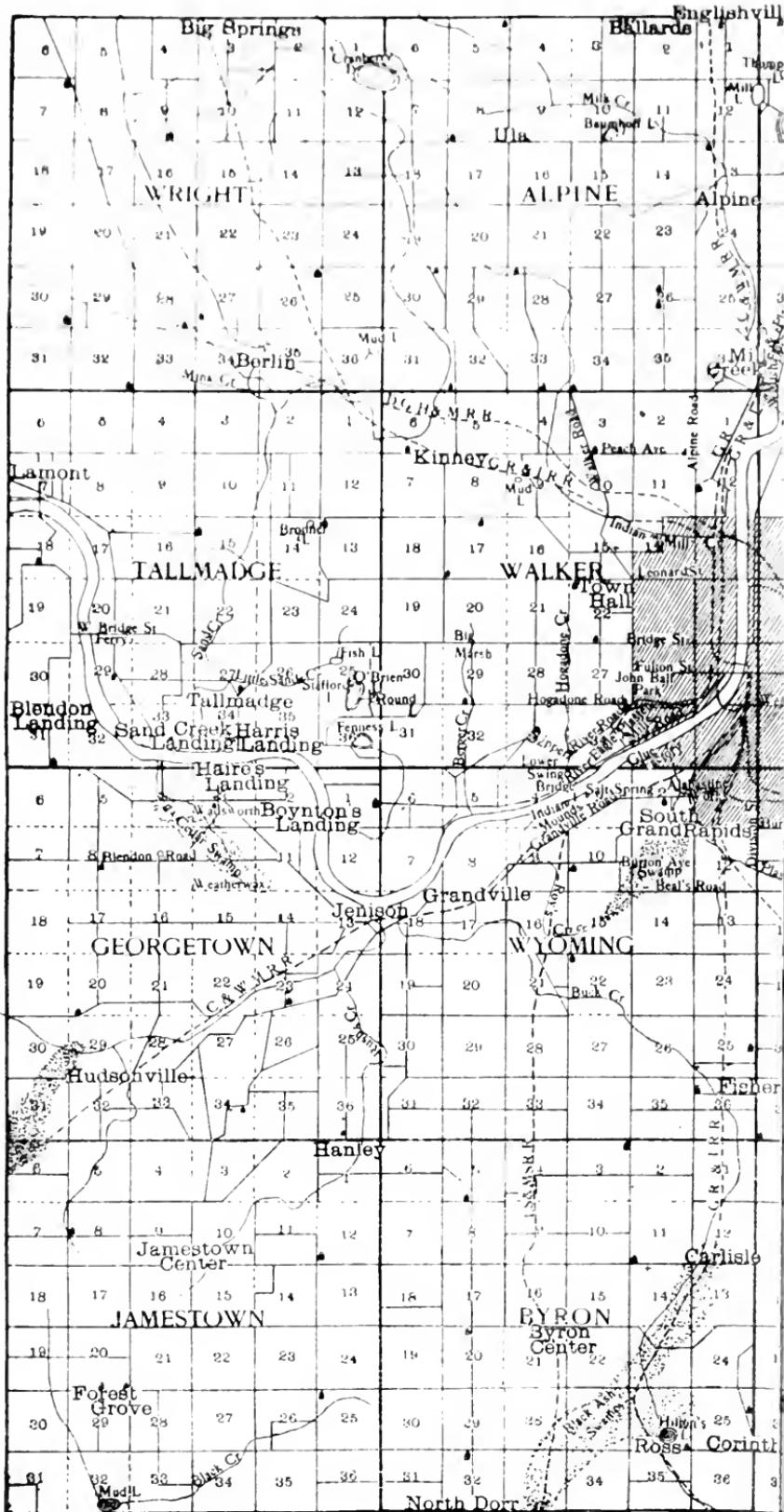
GROWING WITHOUT CULTIVATION

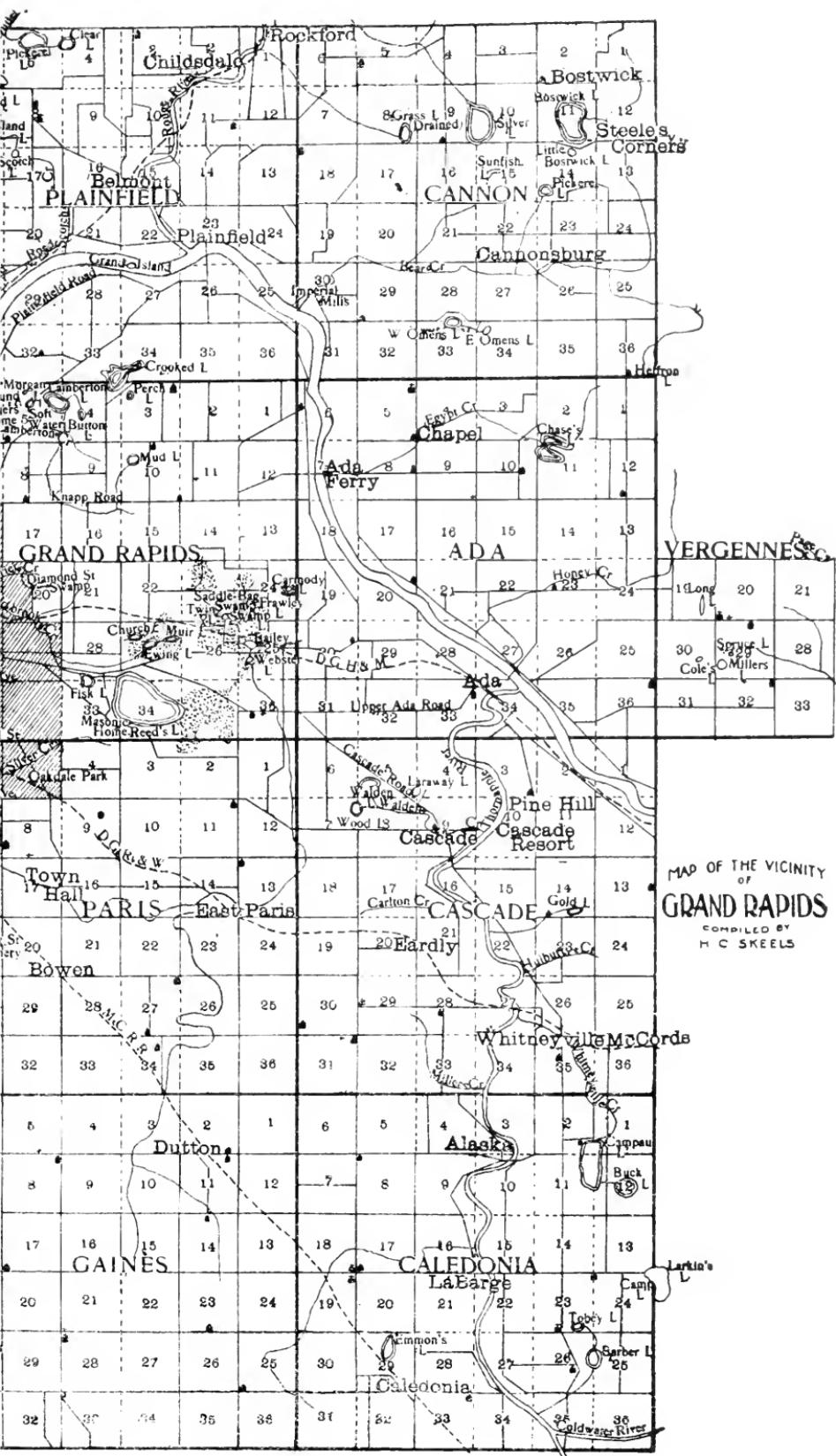
IN THE VICINITY OF
GRAND RAPIDS, MICHIGAN.

BY

EMMA J. COLE.

GRAND RAPIDS, MICH.
A. VAN DORT, Book and Job Printer.
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INTRODUCTION.

I have aimed to include in this publication all of the flowering plants and higher cryptogams, so far as observed, which grow without cultivation within sixteen and one fourth townships, an area of 585 square miles. This territory includes the City of Grand Rapids as a center with its two tiers of surrounding townships.

Students of Botany in the Grand Rapids High School, former teachers of the subject here, and several local collectors, have supplemented my own personal efforts in furnishing the information which it contains.

This catalogue, like all pioneer work in this line, must necessarily prove incomplete. Even in so small a district as this, there will be some unobserved places worthy of careful investigation. It is hoped, however, that it will contribute something to the better knowledge of our flora.

The work has been done with care as to local distribution, abundance, and constancy of the species mentioned. Attention has also been given to any habits, or morphological variations, in those plants which have their natural geographical limits in the State, and which come within, or near, the range of this district.

Care has been taken that no plant should appear in the catalogue without being represented by a specimen in the herbarium referred to, and with sufficient data to warrant its acceptance.* All notes or statements quoted from other sources have been carefully verified.

*The few exceptions are specified.

This publication is intended mainly to assist high school students and local collectors in the study of plant life, by directing their efforts and enlarging their resources.

The herbariums representing this section are especially fine, each containing from five hundred to twelve hundred specimens. They are in Grand Rapids unless otherwise specified. Besides my own herbarium, the following have been consulted:

The collections of Leon J. Cole; Charles W. Fallass, Petoskey, Mich.; Mrs. Mary B. Fallass; Hermann W. Hyser, Plainfield Village, Mich.; Burton E. Livingston; S. Owen Livingston; W. Earle Mulliken; Mrs. Hattie M. Bailey Pieters, Washington, D. C.; "Our Herbarium," by Homer C. Skeels and Miss Jennie Shaddick; also the George D. Sones Collection, now the property of the Kent Scientific Institute.

The following publications have been consulted:

Michigan Flora, Dr. W. J. Beal and Prof. C. F. Wheeler, 1893; *Catalogue of Flowering Plants of the Southern Peninsula of Michigan*, N. Coleman, 1874; *Michigan:—Its Resources*, 1892-'93.

Most grateful acknowledgements are due to Prof. C. F. Wheeler of the Michigan Agricultural College, to whom all doubtful specimens, as well as the entire collection of carices and potamogetons have been submitted. His kindly assistance and unabating interest have been great incentives in the preparation of this work. Dr. B. L. Robinson and his assistant, Mr. M. L. Fernald, of Harvard University, have given valuable suggestions. Mr. Luther S. Livingston of New York City, has kindly read the proof throughout.

Thanks are also due to the members of the Grand Rapids Botanical Club, especially to Miss Jennie Shaddick, Homer C. Skeels, W. Earle Mulliken, and S. Owen Livingston. Their united energies as collectors and students have made this publication possible. Homer C. Skeels prepared the accompanying map of the district.

Miss Annah M. Clark, Mr. Luther S. Livingston, and Prof. Robert H. Wolecott of Nebraska University, have given data from their observations made prior to my own work. Miss Ellen Dean,



INTRODUCTION.

Burton E. Livingston, C. W. Fallass, H. W. Hyser, and R. E. Matteson, have assisted me in various ways.

I am indebted to the courtesy of the following gentlemen for assistance within the line of their official work: W. L. Moore, Chief of the United States Weather Bureau at Washington, D. C., and C. F. Schneider, of the Michigan Section of that Bureau, for meteorological data for the city of Grand Rapids and the Lower Peninsula of Michigan; to Dr. A. C. Lane, State Geologist; to Mr. Frank Leverett of the United States Geological Survey, and Mr. J. F. Nellist of this City, who have assisted Dr. Lane upon local geology. They, with many others, have kindly contributed notes or specimens which have assisted in the preparation of the work.

It is a special pleasure to recall and acknowledge the help of the pupils of the Grand Rapids High School.

CLIMATIC INFLUENCE AND DISTRIBUTION.

The City of Grand Rapids, picturesquely situated in the Grand River Valley, on Grand River, has a latitude of 42.96° N., and a longitude of 85.66° W.

The climate of the Lower Peninsula of Michigan is greatly modified by the surrounding lakes. They render the temperature milder in the winter and more uniform in the summer.

The central part of the district is about 32 miles east of Lake Michigan, and has the advantage of being on the milder side of the State. It is also in the center of the "peach district." That this fruit can be grown here so successfully is regarded as due to climatic influences rather than to the nature of the soil.

The western side of the State is warmer than a corresponding latitude on the eastern side, owing to the southwesterly winds across Lake Michigan. The annual range of temperature for the City of Grand Rapids is 116° . The annual mean for a series of ten years is 46.9° . On an average, the first severe frost is about the last of September; the last, about the first of May.

The average rain-fall, including that in the form of snow, from 1870 to 1899 was 36.55 inches. Grand River at Fulton Street Bridge is 8 feet above Lake Michigan and 583 feet above the sea. The eastern bluffs measure at the Stand Pipe 170 feet above Lake Michigan.

Under these favorable climatic conditions we find trees and lesser plants, such as the tulip-tree, mulberry, papaw, pepperidge, Judas-tree, Kentucky coffee-tree, flowering dogwood, etc., which belong to Ohio, Central Illinois, and even further south, maintaining themselves in the Grand River Valley and the western part of the State.

It is in the valley of Grand River that the northern and southern floras of the State overlap, as may be seen by the following lists:

NORTHERN SPECIES.

<i>Acer spicatum.</i>	<i>Erysimum cheiranthoides.</i>
<i>Arctostaphylos Uva-Ursi.</i>	<i>Juncus Canadensis coarctatus.</i>
<i>Carex pauciflora.</i>	<i>Lonicera oblongifolia.</i>
" <i>tenuiflora.</i>	<i>Polygonum clinode.</i>
<i>Clintonia borealis.</i>	<i>Prunus pumila.</i>
<i>Cornus Canadensis.</i>	<i>Rosa blanda.</i>
<i>Epilobium lineare.</i>	<i>Scirpus pauciflorus.</i>
<i>Eriophorum gracile.</i>	<i>Taxus Canadensis.</i>
" <i>vaginatum.</i>	

SOUTHERN SPECIES.

<i>Asclepias verticillata.</i>	<i>Eleocharis ollacea.</i>
<i>Asimina triloba.</i>	<i>Eragrostis pectinacea spectabilis.</i>
<i>Blephilia hirsuta.</i>	<i>Erigenia bulbosa.</i>
<i>Bonteloria racemosa.</i>	<i>Gymnocladus Canadensis.</i>
<i>Carva alba.</i>	<i>Hemicarpha subsquarrosa.</i>
" <i>camara.</i>	<i>Kuhnia eupatorioides.</i>
" <i>microcarpa.</i>	<i>Liatris spicata.</i>
" <i>poreina.</i>	<i>Liriodendron Tulipifera.</i>
<i>Cassia Marylandica.</i>	<i>Medeola Virginiana.</i>
<i>Cercis Canadensis.</i>	<i>Morus rubra.</i>
<i>Chaerophyllum procumbens.</i>	<i>Nyssa sylvatica.</i>
<i>Collinsia verna.</i>	<i>Ptelea trifoliata.</i>
<i>Cornus florida.</i>	<i>Silphium terebinthinaceum.</i>
<i>Coreopsis trichosperma teuuloba.</i>	<i>Solea concolor.</i>
<i>Desmodium Illinoense.</i>	<i>Sporoholus cryptandrus.</i>
" <i>Marylandicum.</i>	<i>Synthyris Houghtoniana.</i>

Desmodium sessilifolium.
Draba Caroliniana.
Eleocharis mutata.

Tradescantia Virginica.
Utricularia resupinata.
Zizia cordata.

GEOLOGY, TOPOGRAPHY, AND SOIL.

Geologists have demonstrated that the Lower Peninsula of Michigan is made up of layer upon layer of different kinds of rocks formed as sediment, or mud deposit, when Michigan was part of the great ocean.

These rocks lie horizontally one upon the other, with Gratiot County as a center. They rest upon a foundation of Archæan rocks, and in the central part of the State they are many thousand feet thick. The upper and less extensive rocks were formed during the Coal Period. The sedimentary rocks represent, with the greatest regularity of position, nearly all the known formations of this continent, from the Cambrian, which is near the base of the rock series, to the latter part of the Carboniferous Period, whose rocks are well up towards the top of the series. Grand Rapids is situated near the edge of the Subcarboniferous series.

After an interval, when Michigan had become dry land and these strata had been cut by river valleys, came the Glacial Period, or Ice Age, when vast sheets of ice moved from the north slowly southward as far as the vicinity of the Ohio River. They bore a great amount of debris—rock, gravel, sand, etc., from the largest boulders to the finest clay, and covered the entire peninsula with a thick deposit, called by geologists the glacial drift. In places the deposit is a commingled mass of rock-fragments of all sizes imbedded in the clay, while in others it consists largely of material which has been assorted by water, i. e., sand and gravel.

Of the glacial, or surface, geology, Dr. A. C. Lane says: "The ice front formed three lobes, one of which, the Lake Michigan lobe, came up Lake Michigan; another, the Saginaw Bay lobe, came up Saginaw Bay; and a third, the Huron-Erie lobe, extended south-west from lakes Huron and Erie, covering the south-eastern part of the State. Between each two lobes there was an angle

pointing north and draining south, which carried away the water from the melting ice, and at the same time deposited vast beds of sand and gravel. The line of the discharge of the sand and gravel between the Saginaw and Lake Michigan lobes was extended northward as the ice melted back, and passed from near Kalamazoo up to the City of Grand Rapids, and thence north-east and north up beyond Grayling."

In the process of melting away, the ice front seems to have made stops or halts. The successive halts of the ice front are marked by massive ridges composed of till, or stony clay, boulders, gravel, and sand, which are called moraines. These sweep around Saginaw Bay, and connect on the west with ridges that pass southward or southwestward toward the head of Lake Michigan, and on the east with ridges that lead southwestward from the Thumb (between Saginaw Bay and Lake Huron) across the southeastern part of Michigan and northwestern corner of Ohio into Indiana. The position of these morainic ridges has been only partly worked out, and their mapping is now in progress. Dr. Lane and his assistants of the State Survey have covered part of the State, while Messrs. Leverett and Taylor of the United States Survey have recently cooperated with Dr. Lane to complete the mapping. The following upon the glacial drift and surface features of this vicinity has been contributed by Mr. Leverett who has examined the region around Grand Rapids:

"The features are somewhat intricate but they fall in naturally with the view that there was a junction of two lobes in this vicinity. When the ice extended nearly to the southern border of Michigan, the junction between the Saginaw and Lake Michigan lobes was in a great belt of gravel that is traversed by the Grand Rapids and Indiana Railroad south from Kalamazoo, and the point of the reentrant angle was in the great ridges south-east of Gun Lake.

"From this position the ice melted back until the point of the reentrant angle between the ice lobes was at the Dias Hills, a few

miles south of Grand Rapids, and there a halt of some length occurred. The gravel tract between Dias Hills and Gun Lake was formed at that time.

"The ice then melted back sufficiently to bring the reentrant angle up to the bend of Grand River at Plainfield, and again halted. At that time the Lake Michigan lobe formed the ridges and hills that lie on the west side of Grand River from Rockford to Jenison, and its margin continued southward past Jamestown. The Saginaw lobe at the same time covered the region immediately east of Grand Rapids, its margin being in the eastern edge of the City; and it built up the rolling country around Reed's Lake, and its continuation in districts to the north and south. Meantime, the water found its escape southward over the site of Grand Rapids, and on through the gravelly lowland that leads past Carlisle to the Black Ash Swamp, and thence to the pine plains of western Allegan County, where it entered Lake Chicago, a lake that then filled the south end of the Lake Michigan Basin and discharged south-west past Chicago to the Illinois and Mississippi Rivers.

"In melting back from this position, the ice next made a stand near Cedar Springs, and built up the prominent ridges north-east of that village. From these ridges the margin of the Saginaw lobe passed east of south near Nagle Lake to Grand River below Lowell and thence on past Alto, while the margin of the Lake Michigan lobe passed south-west near Sparta and Englishville and formed the western part of the great belt of rolling land west of Grand Rapids.

"At length after several halts that need not be enumerated here, the Saginaw lobe had melted so far back that its front was on the slope toward Saginaw Bay. A lake then formed in front of it, known as Lake Saginaw, which discharged down Maple River to Grand River at Lyons and thence on past Grand Rapids into Lake Chicago. The channel divided near Jenison, one branch turning down the present river to enter Lake Chicago near Lamont, while

the other led south-west past Hudsonville to enter the lake at Zeeland. Great gravelly deltas were formed by each branch of the old outlet at the places where they entered the lake. Much of Allendale Township, Ottawa County, is in the delta of the north branch, while Zeeland stands on the delta of the south branch. As these gravelly deposits are now 60 or 70 feet above Lake Michigan, it is certain that the level of Lake Chicago was about that height above the present lake. Later it dropped to lower levels, and the outlet of Lake Saginaw along Grand River Valley became correspondingly deepened.

The variations in the drift material gave rise to several classes of soil ranging from heavy clay through loamy clay, clayey loam, sand, and gravel, up to coarse cobble. It is usual, however, to find in gravelly places a sufficient amount of fine earthy material to afford a suitable matrix for plant roots.

Perhaps the coarsest deposit within the Grand Rapids district is that in the old lake outlet. Between the City and Grandville the current of water removed the fine material to such a degree that the soil is very stony. In the western part of Grand Rapids and for some miles above the City large numbers of boulders were present in this outlet before the residents made use of them in building. The soil among the boulders was, however, not too coarse for plants to thrive. This same lake outlet carries also some of the most extensive swampy tracts in the district; the Zeeland Swamp south-west of Hudsonville, the Cedar Swamp west of Jenison, and the Burton Avenue Swamp south-west of South Grand Rapids, being illustrations. But this swampy condition is due to subsequent plant growth in the part of the channel having exceptionally flat bottoms, rather than to any deposit made by the outlet. It is found that sand and gravel deposited by the lake outlet underlie all the swamps at a depth of only a few feet.

The strip of gravelly sand which extends from the bend of Grand River near Plainfield southward along the east side of Grand River through Grand Rapids and to Carlisle, being in the line of a

stream of water, carries but a small amount of clayey or fine material, and is less productive than the heavier soils on the borders of this old stream course. In the immediate vicinity of Grand Rapids it has the further disadvantage of being situated on the border of a deep valley into which the water drains rapidly after a rain. The lightness of the soil is shown in the character of the vegetation, it being a strip of "oak openings" whose flora is described below. In this old stream course, the extensive Black Ash Swamp has been developed; but, as in the lake outlet, this is due to subsequent plant growth, and sand may be found by probing to a depth of a few feet.

"The grade of soil next finer than the gravelly sand of the old stream courses is the sand found on the bluffs of Grand and Thornapple Rivers above the bend at Plainfield and on the border of several small tributaries of Grand River, both above and below Grand Rapids. These sandy deposits have apparently in some cases been drifted by wind beyond the limits of the streams that contributed them, being very irregular and patchy.

"The greater part of the Grand Rapids district lies on uplands that were feebly or imperfectly acted upon by currents of water during the melting of the ice sheet. As a consequence, the soils contain a large amount of fine material together with the coarse stones of the drift. The proportion of fine material determines whether it is a heavy clay, a porous clay, or a loamy soil, and this proportion often varies greatly within the limits of a small field. In these uplands there are numerous basins formed by the irregular heaping of the drift, aided perhaps by unequal settling of the drift material. These, because of imperfect drainage, usually contain either lakes or swamps. The basins are especially numerous in Grand Rapids Township from Reed's Lake northward, but are not rare in any part of the uplands of this district."

The indurated rock formations which underlie the drift have furnished much of its material and are, therefore, of much importance in a study of the soil.

In the northern part of the City, along Grand River, subcarboniferous limestone lies above the gypsum, and crops out in the bed of the River. In the southern part of the City and south-west to Grandville, the gypsiferous series of shales, hydraulic limestone and gypsum, is uppermost, and comes to the surface at the mouth of Plaster Creek. Rapid variations in the altitude of the rock surface make it evident that the limestone is much eroded.

In section 19, Paris Township (near the "brick school-house" on South Division Street) a ledge of this subcarboniferous limestone crops out and is traceable for a mile northward and again appears half a mile to the south. About a mile north-east of the school-house, it lies 30 feet below the surface, then dips to the north 200 feet to the mile.

The fertility of some of the sandy soils of this district is thought to be due in some degree to the presence of gypsum fragments in them. The pulverized limestone also has, no doubt, contributed to the enrichment of this area, disseminated as it has been through the drift.

THE FLORA OF GRAND RAPIDS AND VICINITY.

In the western and southern part of the district, beech and maple timber predominate, while in the eastern, the oaks are the chief forest trees. The low lands are wooded with red maple, hawberry, elm, black ash, burr oak, swamp oak, sycamore, black willow, butternut, walnut, viburnums, dogwoods, etc. As this district is just within the southern limits of the pine region, white pine from single trees to groves of considerable extent is intermingled with the hard wood. The largest tracts were formerly about Mill Creek, in the eastern part of Alpine, in the center of Georgetown, and east of Fisher Station; but they have been cut for timber. All the sections previously mentioned, however, are more or less intermingled and pass into one another.

Since the district has become more thickly settled, it is undergoing rapid transformations. Much of the swamp land is being

drained, cleared, and utilized; forests are being deprived of their valuable timber, and uplands converted into farms. The woodlands at present consist mostly of the "wood-lot" reserved by the farmer.

From the standpoint of systematic botany, this district is unfortunate in having so little territory which is not capable of cultivation.

Some of the most interesting collecting grounds with their characteristic floras are worthy of mention. In the "oak openings" in and near the City, one is sure to discover the following plants:

<i>Andropogon furcatus.</i>	<i>Lespedeza capitata.</i>
" <i>scoparius.</i>	" <i>polystachya.</i>
<i>Anemone Hepatica.</i>	<i>Lupinus perennis.</i>
<i>Aster laevis.</i>	<i>Monarda fistulosa.</i>
" <i>macrophylius.</i>	<i>Panicum depauperatum.</i>
<i>Danthonia spicata.</i>	" <i>dichotomum.</i>
<i>Carex Pennsylvanica.</i>	<i>Potentilla simplex.</i>
<i>Ceanothus Americanus.</i>	<i>Pteris aquilina.</i>
<i>Comandra umbellata.</i>	<i>Pyrola elliptica.</i>
<i>Cornus candidissima.</i>	<i>Rubus Canadensis.</i>
<i>Desmodium nudiflorum.</i>	<i>Salix humilis.</i>
" <i>paniculatum.</i>	<i>Sassafras officinale.</i>
<i>Galium boreale.</i>	<i>Solidago nemoralis.</i>
<i>Hellianthus divaricatus.</i>	<i>Viburnum pubescens.</i>
<i>Krigia amplexicaulis.</i>	<i>Vicia Americana.</i>
<i>Lechea major.</i>	<i>Viola pedata.</i>

THE SADDLE-BAG SWAMP REGION.

This swamp lies about five miles east of the City. It was drained and burned in 1895. Although the term Saddle-Bag Swamp is applied in this work only to the immediate vicinity of the Twin Lakes, the term Saddle-Bag Swamp region is used to cover about 1000 acres, and includes seven small lakes which the draining has lowered: Bailey, Carmody, Frawley, Swamp, Twin Lakes, and Webster. These lakes were formerly surrounded by open sphagnum bogs which gradually passed into sphagnum swamp, overgrown with tamarack, black spruce, mountain holly, leather-leaf, and huckleberry brush. Here were found the following species:

<i>Andromeda polifolia</i>	<i>Habenaria psycodes</i> .
<i>Calla palustris</i> .	<i>Ledum Groenlandicum</i> .
<i>Calopogon pulchellus</i>	<i>Menyanthes trifoliata</i> .
<i>Carex tenella</i> .	<i>Microstylis ophioglossoides</i> .
" <i>tenelliflora</i> .	<i>Phragmites communis</i> .
<i>Cypripedium acaule</i> .	<i>Pogonia ophioglossoides</i> .
<i>Drosera intermedia Americana</i>	<i>Potentilla palustris</i> .
" <i>rotundifolia</i> .	<i>Ribes rubrum</i> .
<i>Glycera pallida</i> .	<i>Salix candida</i> .
<i>Habenaria blephariglottis</i>	" <i>myrtillifolia</i> .
" <i>hyperborea</i> .	<i>Sarracenia purpurea</i> .
" <i>lacerata</i> .	<i>Vaccinium macrocarpon</i> .
" <i>leucophaea</i> .	" <i>Oxycoccus</i> .

It is to be regretted that the sedges of this interesting region were not better known before its devastation.

LAMBERTON LAKE REGION.

The lake regions north of the City have always proved attractive fields to collectors. The Lamberton Lake region consists of an almost unbroken chain of lakes or marshes, enclosed by bluffs of sand loam, wooded with oak. The lakes are Lamberton and Mud Lakes with their creek regions; Round with its marsh; Button, Soft-water, and Morgan. These lakes are bordered by open marshes either of sphagnum or muck underlaid by some marl. Much marsh land about Lamberton and Round Lakes has been reclaimed by deepening Lamberton Creek and thus lowering the lakes. The marshes are overgrown with sedges and low shrubby plants; as, shrubby St. John's-wort, dwarf birch, low willows, etc. This lake region is the home of the following species:

<i>Andromeda polifolia</i> .	<i>Linaria Canadensis</i> .
<i>Arenaria stricta</i> .	<i>Panicum flexile</i> .
<i>Cardamine pratensis</i> .	<i>Pogonia ophioglossoides</i> .
<i>Calopogon pulchellus</i> .	<i>Polygala paucifolia</i> .
<i>Carex aquatilis</i> .	<i>Quercus prinoides</i> .
" <i>flava</i> .	<i>Rynchospora capillacea levigata</i> .
" <i>monilis</i> .	<i>Sarracenia purpurea</i> .
" <i>Tuckermani</i> .	<i>Scirpus pauciflorus</i> .
<i>Crataegus rotundifolia</i> .	<i>Scleria verticillata</i> .
<i>Cypripedium acaule</i> .	<i>Solidago Ohioensis</i> .
" <i>candidum</i> .	" <i>Riddellii</i> .
<i>Drosera intermedia Americana</i> .	<i>Spiraea tomentosa</i> .
" <i>rotundifolia</i> .	<i>Synthyris Houghtoniana</i> .

<i>Eriophorum gracile.</i>	<i>Triglochin palustris.</i>
" <i>vagnatum.</i>	" <i>maritima.</i>
<i>Festuca tenella.</i>	<i>Utricularia cornuta.</i>
<i>Habenaria Hookeriana.</i>	" <i>gibba.</i>
" <i>hyperborea.</i>	" <i>intermedia.</i>
<i>Hemicarpha subsquarrosa.</i>	" <i>minor.</i>
<i>Hypericum Ascyon.</i>	<i>Viola lanceolata.</i>
<i>Krigia Virginica.</i>	" <i>sagittata.</i>

CROOKED LAKE REGION.

This region lies one mile north-east from the Lamberton Lake region, and includes Perch Lake and Crooked Lake, the latter being now in two distinct parts. This region is surrounded by a narrow marsh, and beyond by hills of sand loam. Many of the species in the Lamberton Lake region are found here, those differing are:

<i>Asclepias verticillata.</i>	<i>Nymphaea odorata.</i>
<i>Carex Sartwellii.</i>	<i>Physalis Virginiana vulgaris.</i>
<i>Cyperus Engelmanni.</i>	<i>Psilocarya scirpoidea.</i>
" <i>speciosus.</i>	<i>Rynchospora macrostachya.</i>
<i>Eleocharis olivacea.</i>	<i>Scirpus Smithii.</i>
<i>Fuirena squarrosa pumila.</i>	<i>Stachys hyssopifolia.</i>

THE REED'S LAKE REGION.

This region includes Reed's Lake and Fisk Lake. On the margin of Reed's Lake in shallow water occur:

<i>Alisma Plantago.</i>	<i>Pontederia cordata.</i>
<i>Decodon verticillatus.</i>	<i>Sagittaria arifolia.</i>
<i>Eleocharis mutata.</i>	" <i>latifolia.</i>
" <i>palustris vigens.</i>	" <i>rigida.</i>
<i>Equisetum limosum.</i>	<i>Scirpus lacustris.</i>
<i>Heteranthera graminea.</i>	" <i>pungens.</i>
<i>Nuphar advena.</i>	<i>Sparganium androcladum.</i>
<i>Nymphaea tuberosa.</i>	" <i>eurycarpum.</i>
<i>Peltandra undulata.</i>	" <i>simplex.</i>
<i>Phragmites communis.</i>	<i>Typha latifolia.</i>

In deeper water, such as the following:

<i>Bidens Beckii.</i>	<i>Potamogeton ionchites.</i>
<i>Brasenia peltata.</i>	" <i>lucens.</i>
<i>Ceratophyllum demersum.</i>	" <i>pectinatus.</i>
<i>Elodea Canadensis.</i>	" <i>perfoliatus.</i>
<i>Lemna trisulca.</i>	" <i>perfoliatus Richardsonii.</i>
<i>Myriophyllum spicatum.</i>	" <i>praelongus.</i>

Potamogeton amplifolius
 " *foliosus*,
 " *Priestii*,
 " *lateralis*

Potamogeton pusillus,
 " *hosteraefolius*
Ranunculus circinatus

PINE HILL.

North of Cascade Springs is a precipitous bluff, 150 feet above the Thornapple River, composed chiefly of white sand. Here are found:

Acerates viridiflora.
Asclepias obtusifolia.
Aster sericeus.
Bouteloua racemosa.
Cornus circinata.
Eragrostis pectinacea spectabilis.
Juniperus Virginiana.
Monarda punctata.
Pentstemon pubescens.

Polygonum tenui,
Quercus Muhlenbergii,
 " *prinoides*,
Selaginella rupestris,
Solidago rigida,
 " *rigidula*,
Sporobolus cryptandrus,
Synthyris Houghtoniana,
Zizia cordata.

BURTON AVENUE SWAMP.

This swamp extends south-west from South Grand Rapids. At present it covers about 500 acres. Its width varies from one half to three fourths of a mile. The portion south of Burton Avenue is a sphagnous bog (called Orchid Swamp), sparingly overgrown with low willows, shrubby St. John's-wort, poison sumac, and occasional tamarack. This passes into a swampy region which originally contained white pine, hemlock, and occasional arbor-vitae, but in which, at present, black ash, yellow birch, and poison sumac predominate. This in turn is followed by a low swampy tract covered by a tangle of under-brush, mostly spice-bush; thence it passes into a white pine tract. The following species have their homes here:

Aplectrum hyemale.
Arethusa bulbosa.
Calopogon pulchellus.
Carex limosa,
 " *pedunculata*.
Clintonia borealis.
Corydalis glauca.
Cypripedium parviflorum,
 " *pubescens*

Cypripedium spectabile.
Habenaria tridentata.
Ledum Groenlandicum.
Mitella nuda.
Poa flexuosa.
Ribes rubrum.
Salix candida.
Viola blanda palustriformis,
 " *lanceolata*

CEDAR SWAMP.

This swamp is in Georgetown and is very similar in the character of its flora to the preceding one. It extends about three miles in a semicircle, with a width of about one half mile, from Grand River toward Jenison.

THE ZEELAND SWAMP.

This noted swamp commences about one mile west of Hudsonville, passes through the north-west corner of Jamestown, and thence through Zeeland to Black Lake. Much of this swamp is now under cultivation and forms some of the most fertile land in Ottawa County. The portion near Hudsonville is not unlike the two swamps previously described, and is mentioned in the Catalogue as the "Hudsonville Swamp."

THE MILL CREEK WOODS.

This region lies north-west from the West Michigan Fair Grounds, and consists of a series of wooded hills intersected by ravines and creeks. It is wooded chiefly with white pine, interspersed with oak, birch, maple, and an occasional tulip-tree. The forest is northern in its character. Here grow:

Aspidium Boottii.	Habenaria Hookeriana.
Bartonia tenella.	" hyperborea.
Clintonia borealis.	" orbiculata.
Cypripedium acaule.	Liriodendron Tullipifera.
Equisetum pratense.	Lycopodium complanatum
" scirpoides.	Medeola Virginiana.
" sylvaticum.	Monotropa Hypopitys.

PLAINFIELD VILLAGE BLUFFS.

North of Plainfield Village and near Grand River is found a range of bluffs, above which is a level plain. Back of this plain extends another range and then a level region. The first range forms an immediate background to the Village, and the first level is nearly 90 feet above Lake Michigan. The second range is about a mile distant, surmounted by a level about 190 feet above the Lake. The first bluff faces south and remains, for the most part, in its primitive condition. Its soil is of a dry grav-

elly loam, and here still lingers a most interesting group of plants, a list of which is given below. The portion of this district north-east from the Village is known as "the prairie," and prior to settlement by the whites, was utilized by the Indians for their cornfields.

<i>Acerates viridiflora.</i>	<i>Eragrostis pectinacea spectabilis.</i>
<i>Amorpha canescens.</i>	<i>Kuhnia eupatorioides.</i>
<i>Ascleplas obtusifolia.</i>	<i>Linum sulcatum.</i>
<i>Aster multilorus.</i>	<i>Monarda punctata.</i>
<i>Bouteloua racemosa.</i>	<i>Pentstemon pubescens.</i>
<i>Corycopsis lanceolata.</i>	<i>Quercus Muhlenbergii.</i>
<i>Desmodium Illinoense.</i> <i>sessilifolium.</i>	<i>Solidago rigida.</i>

The richest part of the district lies, however, within the northern arch of Grand River and north of a line drawn from Grandville east to the River. There are only about forty plants indigenous to the district covered by this work, which do not occur here. Second to this are the collecting grounds about the lakes in Plainfield and Cannon.

Weeds form a conspicuous part of the flora of any comparatively well settled district, and especially is this true about a large city. Our flora contains about twenty-three native species which may be considered weeds and seventy which are introduced, chiefly from Europe.

Of plants generally called poisonous, we have four—the stinging nettle, wood nettle, poison ivy, and poison sumac.

It is hoped that all collectors will use the utmost care in protecting and preserving those plants which are becoming scarce within the district. Experienced collectors who feel the true spirit of the work, do not need cautioning, but the young and inexperienced often need to be restrained in their enthusiasm. A good maxim is: Consider every plant *rare* until it is known with certainty to be abundant. I hope that all persons finding any plant not mentioned in this Catalogue, or new stations for plants marked rare, local, scarce, or infrequent, will kindly report such at once to me.

The following species are known to be disappearing:

INTRODUCTION.

XX

<i>Arethusa bulbosa.</i>	<i>Habenaria blephariglottis.</i>
<i>Castilleja coccinea.</i>	" <i>ciliata.</i>
<i>Cypripedium acaule.</i>	<i>Hibiscus Moscheutos.</i>
" <i>candidum.</i>	<i>Jeffersonia diphylla.</i>
<i>Geum triflorum.</i>	

The following species have apparently disappeared:

<i>Echinacea purpurea.</i>	<i>Microstylis ophioglossoides.</i>
<i>Habenaria leucophaea.</i>	<i>Pogonia verticillata.</i>
<i>Ledum Groenlandicum.</i>	

The following species are found on the shores of the Great Lakes, and occasionally occur in this district:

<i>Aster ericoides.</i>	<i>Monarda punctata.</i>
<i>Geranium Robertianum.</i>	<i>Potamogeton perfoliatus Richardsonii.</i>
<i>Gerardia purpurea.</i>	<i>Polygonella articulata.</i>
<i>Hibiscus Moscheutos.</i>	<i>Salix glaucocephala.</i>
<i>Hypericum Kalmianum.</i>	<i>Sisymbrium canescens.</i>
<i>Juncus Balticus.</i>	

The following species have been reported from no other locality in the State:

<i>Bromus tectorum.</i>	<i>Pentstemon laevigatus.</i>
<i>Mentha rotundifolia.</i>	<i>Psilocarya scripolde.</i>
<i>Myriophyllum tenellum.</i>	<i>Solidago tenuifolia.</i>
<i>Onopordon Acanthium.</i>	<i>Verbena stricta.</i>
<i>Oxybaphus hirsutus.</i>	<i>Viola pedata bicolor.</i>
<i>Panicum commutatum.</i>	

SUMMARY OF SPECIES ENUMERATED IN THE CATALOGUE.

I. Plants native to the Grand Rapids Flora,.....	1111
II. Plants introduced into the Grand Rapids Flora,..	176
III. Plants not discovered in the district but found just outside its limits,.....	3

Total number of plants,.....	1296
IV. Plants introduced from the Old World,.....	152
V. Plants introduced from other sources,.....	24
VI. Of the introduced plants enumerated above, there are that are spontaneous but not considered established.	27

PLAN OF THE CATALOGUE.

The names of the species supposed to be indigenous to the New World are printed in **heavy faced type**. The names of the plants supposed to be introduced from the Old World are printed in **small capitals**.

The nomenclature followed, in the main, is that of the Index Kewensis. The names used in the sixth edition of Gray's Manual, when they differ essentially from the names in the Kew Index, are given in parentheses. The nomenclature of the Illustrated Flora, by Britton and Brown, has been added in *italics* when it differed from that given in the Kew Index; but where this change is simply a "gender ending" of a specific name, it has been omitted.

In reference to the occurrence of a plant in its proper habitat the terms, common, frequent, infrequent, occasional, local, and rare, are used to express relative abundance. The last two need some explanation. Local, plentiful at the station, but the stations few; rare, not more than four stations, and the plants few at each.

Plants without a catalogue number are supposed not to be established. *

The dates of the flowering of plants are given as aids in collecting. They were obtained from my notes on six successive years' observations averaged with dates taken from the herbariums mentioned.

The term City, in the Catalogue, always refers to the City of Grand Rapids—Grand Rapids, in every case, applies to the township. The township name is used alone; as, Ada, etc. If a village has the same name as the township, it is so specified; as, Ada Village.

In all cases I have endeavored to give proper credit by initials or name to the discoverer of a new plant or a new station for an infrequent, local, or rare one. When no name appears, the plant has come under my own personal observation, and is contained in my herbarium.

*Three are inserted which grow near the border of the district.

In all cases when the diameters of trees are given, the measurements were made three feet above the ground.

The following localities need special mention: The Fish Pond, on Hogadone Road near Butterworth Avenue; the Plaster Cave, near the Eagle Plaster Mills; Feakin's Marsh, north of Plaster Creek on Buchanan Street, South Grand Rapids.

EMMA J. COLE,

January, 1904.

Grand Rapids, Michigan.



By a leafless wood
An old alder stood
Its cone-tufted branches gray and cold.

Till the breath of spring
Did over them fling

Soft brown catkins powdered with gold.

The young sisters neat,
Close at their feet,
Sat modest, unheeded, and small,
While tossing his head,
A gay catkin said,

'I am noticed and prized by all.'

Alas, for his pride!
'Tis soon cast aside
Poor and plain in the dust he hides:
While cone sister grew,
And unceasingly true,

'Through the long changing year abides

CATALOGUE OF PLANTS.

Throughout the Catalogue the following initials refer to notes and herbariums.

(F.) C. W. Fallass.
(B. E. L.) B. E. Livingston.
(S. O. L.) S. O. Livingston.
(M. & C.) W. E. Mulliken and L. J. Cole.
(O. H.) H. C. Skeels and Miss J. Shaddick.
(S.) G. D. Sones.
M. A. C. Michigan Agricultural College.
U. of M. University of Michigan.

PTERIDOPHYTA.

SPORE-BEARING PLANTS.

OPHIOGLOSSACEAE. ADDER'S-TONGUE FAMILY.

BOTRYCHIUM Swartz. MOONWORT.

1. **B. ternatum** Swartz.
Moist soil; scarce. Aug.-Nov.
Mill Creek woods (O.H.); near Caledonia Village.
2. **B. Virginianum** Swartz.
Rich woods; frequent. June-July.

FILICES. FERN FAMILY.

ADIANTUM L. MAIDENHAIR.

3. **A. pedatum** L.

Common in rich moist woods. July-Aug.

A general favorite.

ASPIDIUM Swartz. SHIELD FERN.

Dryopteris Adans.

4. **A. acrostichoides** Swartz. CHRISTMAS FERN.

Moist woods and hillsides; common. July-Aug.

The evergreen fronds are used for decorative purposes.

5. **A. Boottii** Tuckerm.

In alder thickets; rare. July-Aug.

Mill Creek woods (O.H.).

6. **A. cristatum** Swartz.

Swamps and boggy marshes; infrequent. July-Aug.

Farm of J. R. Wade, Sec. 29, Caledonia; Sec. 28, Vergennes; Secs. 14 and 25, Jamestown.

7. **A. Goldianum** Hook.

Beech and maple woods; occasional. July-Aug.

See. 14, Jamestown; Fisher Station; banks of Grand River at Soldiers' Home woods, West Bridge St. Ferry, Boynton's Landing.

8. **A. marginale** Swartz.

Rich woods and hillsides; frequent. Aug.-Sept.

The evergreen fronds are used by florists.

9. **A. Noveboracense** Swartz.

Moist woods and thickets; occasional. July-Aug.

Banks of the Thornapple River; Fisher Station; Walker; Alpine; Sec. 14, Jamestown; S. B. Smith's woods, Sec. 14, Grand Rapids.

10. **A. spinulosum** Swartz.

Rich woods; common. Aug.-Sept.

11. **A. spinulosum intermedium** D.C. Eaton.

Growing with the species; common. Aug.-Sept.

12. **A. Thelypteris** Swartz.

Swamps and low grounds; common. July-Aug.

ASPLENIUM L. SPLEENWORT.13. **A. angustifolium** Michx.

Rich moist woods; occasional. July-Aug.

Sec. 14, Jamestown; Byron Center; Sec. 25, Byron; clay ravines, Sec. 5, Georgetown; woods south of Reed's Lake; Walker; Soldiers' Home; West Bridge St. Ferry.

14. **A. Filix-foemina** Bernh.

Common in rich moist woods and shaded ravines. July-Aug.

Exceedingly variable.

15. **A. thelypteroides** Michx.

A. acrostichoides Swartz.

Beech and maple woods; local. July-Sept.

Woods of S. S. Towner, Byron Center; Sec. 14, Jamestown.

CYSTOPTERIS Bernh. BLADDER FERN.16. **C. bulbifera** Bernh.

Shady banks along streams; frequent. July.

17. **C. fragilis** Bernh.

Frequent on mounds in wet woods. June-July.

ONOCLEA L.18. **O. sensibilis** L. Sensitive Fern.

Moist soil; common. Sept.-Nov.

19. **O. Struthiopteris** Hoffm.

Rich moist woods; infrequent. Aug.-Oct.

Sec. 14, Jamestown; Hudsonville; banks of Grand River at Grandville, West Bridge St. Ferry, Plainfield Village.

A stately fern.

OSMUNDA L. FLOWERING FERN.20. **O. cinnamomea** L. Cinnamon Fern.

Wet places; common. Mid-May-June.

21. **O. Claytoniana** L.

Common in swamps. Mid-May-June.

22. **O. regalis** L. Flowering Fern.

Swamps; common. Mid-May-June.

Forms showing transition stages between fertile and sterile fronds are frequent.

PHEGOPTERIS Fée. BEECH FERN.23. **P. hexagonoptera** Fée.

In beech woods; occasional. July-Aug.

John Ball Park, City; West Bridge St. Ferry; Farm of M. J. Schenck, Cascade Gravel Road, Sec. 5, Cascade; Byron Center.

PTERIS L. BRAKE OR BRACKEN.24. **P. aquilina** L. Common Brake.

Copses; common. Aug.-Sept.

WOODWARDIA Smith. CHAIN-FERN.25. **W. Virginica** Smith.

Swamps; especially common in and about huckleberry swamps. July-Aug.

Saddle-Bag Swamp region; Lamberton Lake region; Bronner Lake; Vergennes; Ada.

EQUISETACEAE. HORSETAIL FAMILY.**EQUISETUM** L. HORSETAIL. SCOURING RUSH.26. **E. arvense** L. Common Horsetail.

Moist gravelly or sandy soil; especially common along railroad embankments. Mid-April-May.

27. **E. hyemale** L. Scouring-Rush. Shave-Grass.
Wet banks; common. June.

28. **E. laevigatum** A. Braun.
Moist soil; rare. June.
Wallen's Tannery, City (O.H.).

29. **E. limosum** L.
E. fluviale L.
In shallow water; common. June.

30. **E. palustre** L.
Cold springy bogs in Cedar Swamp (Weatherwax Part). Rare.
July.

31. **E. pratense** Ehrh.
Moist sandy woods; rare.
Mill Creek woods (O.H.); Stafford Lake; Farm of Chas. Barkley, Sec. 15, Ada.
It has never been found in fruit here.

32. **E. robustum** A. Braun.
In wet places; infrequent. June-July.
East end of Reed's Lake; Pine Island Lake; Plainfield Village;
woods near the Glue Factory.

33. **E. scirpooides** Michx.
Mill Creek woods (O.H.). Rare. June.
Near its southern limits.

34. **E. sylvaticum** L.
Moist sandy woods and thickets; local. April-May.
Mill Creek woods; Farm of Chas. Barkley, Sec. 15, Ada; Farm
of Mr. Gormley, Sec. 2, Walker; East St. Pinery.
It fruits sparingly. Near its southern limits.

35. **E. variegatum** Schleicher.

Moist soil; rare. June-July.

Wallen's Tannery, City; G. R. & I. Ry., near Burton Ave. (O.H.); Silver Lake.

LYCOPODIACEAE. CLUB-MOSS FAMILY.

LYCOPODIUM L. CLUB-MOSS.

36. **L. clavatum** L. Common Club-Moss.

In dry woods; scarce. June.

Banks of Buck Creek, near Grandville; clay ravines, See. 5 Georgetown.

37. **L. complanatum** L. Ground-Pine.

In woods and thickets with pine; infrequent. July.

Mill Creek woods; Upper River Road; bluffs along Scotch Creek.

38. **L. lucidulum** Michx.

Cold moist woods; occasional. Aug.-Sept.

Burton Ave. Swamp; clay ravines, See. 5, Georgetown; See. 29, Vergennes; See. 25, Jamestown.

39. **L. obscurum** L.

In moist woods; occasional. July-Sept.

East St. Pinery; Burton Ave. Swamp; Cedar Swamp.

SELAGINELLACEAE.

SELAGINELLA Beauv.

40. **S. apus** Spring.

Wet shaded places; frequent. June-July.

Pine Island Lake; Lamberton Lake; Campau Lake; Burton Ave. Swamp; Wood Lake, etc.

41. **S. rupestris** Spring.

Dry sterile soil on Pine Hill; rare. Aug.-Oct.

SPERMATOPHYTA.

SEED-BEARING PLANTS.

*G YMNOSPERM A E.***CONIFERA E.** PINE FAMILY.**JUNIPERUS** L. JUNIPER.42. **J. communis** L. Common Juniper.

On the bluffs of Plaster Creek, near the Paris Town Hall. May.

43. **J. Virginiana** L. Red Cedar. Savin.

Sterile bluffs. May.

Frequent along the Thornapple River and its tributaries.

LARIX Tourn. LARCH.44. **L. Americana** Michx. American or Black Larch. Tamarack.*L. laricina* (Du Roi) Koch.

In cold swamps, and about lake margins; often forming tracts of many acres in extent. Last of April–Mid-May.

PICEA Link. SPRUCE.45. **P. nigra** Link. Black Spruce.*P. Mariana* (Mill.) B.S.P.

A small tree growing in sphagnum swamps; not abundant. May. Spruce Lake; Mud Lake, Plainfield; formerly abundant in the Saddle-Bag Swamp region, now limited to the margins of Carmody and Frawley Lakes.

PINUS Tourn. PINE.46. **P. Strobus** L. White Pine.

In light soil and in swamps; frequent. June.

Formerly there were tracts of considerable size in the eastern part of Alpine, central Georgetown, and east of Fisher Station. What remains is intermingled with hard wood trees. A valuable lumber tree.

TAXUS Tourn. YEW.

47. **T. Canadensis** Willd. American Yew. Ground Hemlock.
T. minor (Michx.) Britton.
 Moist cold woods with evergreens. A low straggling shrub.
 Mid-April-Mid-May.
 Abundant in Cedar Swamp (Weatherwax Part); Hudsonville;
 See. 25, Jamestown.

THUYA L. ARBOR VITAE.

48. **T. occidentalis** L. Arbor Vitae. White Cedar.
 Along streams, and in cold swamps. First of May.
 A fair sized tree, and tracts are often of several acres in extent.
 The timber is used for fence posts, telegraph poles, etc.
 Cedar Swamp; Burton Ave. Swamp; Hudsonville; Carlisle;
 Bear Creek; shores of Mud Lake, Wright; See. 25, Jamestown;
 Black Ash Swamp.

TSUGA Carrière. HEMLOCK.

49. **T. Canadensis** Carrière.

Woods; infrequent. June.

West Bridge St. Ferry; clay ravines, See. 5, Georgetown; Sec. 25, Jamestown; Sees. 30 and 31, Byron; Burton Ave. Swamp. Trees have been cut here within the last four or five years whose annual rings show them to be 250-300 years old (B. E. L.).

ANGIOSPERMÆ.

MONOCOTYLEDONES.

TYPHACEAE. CAT-TAIL FAMILY.

SPARGANIUM Tourn. BUR-REED.

50. **S. androcladum** Engelm.
 Bogs and shallow water; common. July.
 Thornapple River at Alaska; Reed's Lake; Fisk Lake.

51. **S. eurycarpum** Engelm.

In shallow water, streams, and lake borders; frequent. June.

52. **S. simplex** Huds.

In standing water in marshy places; common. Mid-June-July.

TYPHA Tourn. CAT-TAIL FLAG.53. **T. latifolia** L. Common Cat-tail.

Marshy places; common. Mid-June-July.

NAIADACEÆ. PONDWEED FAMILY.**NAIAS** L.54. **N. flexilis** Rostk. & Schmidt.

Common in lakes. Summer.

POTAMOGETON Tourn. PONDWEED.

[Dates under this genus refer to time of fruiting.]

55. **P. amplifolius** Tuckerm.

Abundant in Reed's Lake and Fisk Lake. July-Aug.

No floating leaves on deep water plants.

56. **P. foliosus** Raf. (P. pauciflorus *Pursh.*)

In ponds and streams. July-Aug.

Reed's Lake; Grand River (Prof. C. F. Wheeler).

57. **P. foliosus Niagarensis** (Tuckerm.) Morong.

(P. pauciflorus Niagarensis *Gray.*)

In running water. July-Aug.

Mill Creek near Alpine Station; Thornapple River at Cascade Springs and Alaska.

58. **P. Friesii** Ruprecht. (P. mucronatus *Schrad.*)

In still water. July-Aug.

Grand River; abundant in Reed's Lake.

P. mucronatus Schrad. does not occur in America.

59. **P. heterophyllus** Schreb.

Abundant in Pine Island Lake. Aug.-Sept.

60. *P. heterophyllus graminifolius* (Fries) Morong.
Found with the species. Aug.-Sept.

61. *P. Illinoensis* Morong.
Muddy banks of Rouge River at Plainfield Village. Aug.

62. *P. lateralis* Morong.
Abundant in Reed's Lake along the N. W. shore from Manhattan Beach to Lakeside Club House, growing in deep water (M. & C.). July.

63. *P. ionchites* Tuckerm. (*P. fluitans* Roth.)
Lake borders and slow streams; not infrequent. July-Aug.
Abundant in Reed's Lake; Saddle-Bag Swamp region; Grand River; Thornapple River.

64. *P. lucens* L.
Abundant in Reed's Lake. Aug.

65. *P. natans* L.
In shallow or deep water in lakes, ponds, and slow streams; common. July-Aug.

66. *P. pectinatus* L.
Thornapple River; Grand River; Reed's Lake; abundant. July-Aug.

67. *P. perfoliatus* L.
Abundant in Reed's Lake and in Grand River. July-Aug.

68. *P. perfoliatus Richardsonii* A. Bennett.
(*P. perfoliatus lanceolatus* Robbins.)
Found growing in abundance with the species. July-Aug.

69. *P. praelongus* Wulf.
Abundant in Reed's Lake, and in Little Bostwick Lake. Aug.-Sept.

70. *P. pusillus* L.
Abundant in Reed's Lake along the N. W. shore from Manhattan Beach to Lakeside Club House. Found growing with *P. lateralis*. July-Aug.

71. **P. Zizii** Roth.

Campau Lake. Aug.-Sept.

72. **P. zosteraefolius** Schum.

Abundant in Reed's Lake and in Grand River. July-Aug.

SCHEUCHZERIA L.73. **S. palustris** L.

Sphagnous bogs at Mud Lake, Plainfield; Miller's Lake. Rare. Mid-May-June.

TRIGLOCHIN L. ARROW-GRASS.74. **T. maritima** L.

Marl marshes and brackish places; occasional. Mid-June-July. Marshes about Lamberton Lake; Mud Lake, Plainfield; Feakin's marsh.

75. **T. palustris** L.

Marl marshes. July.

Abundant about Lamberton Lake; edges of marsh about the Salt Spring; Campau Lake; Pine Island Lake; Clear Lake.

ALISMACEAE. WATER-PLANTAIN FAMILY.**ALISMA** L. WATER-PLANTAIN.76. **A. Plantago** L.*1. Plantago-aquatica* L.

In shallow water and mud; common. July-Aug.

SAGITTARIA L. ARROW-HEAD.77. **S. arifolia** Nutt.

Mud and shallow water. July-Aug.

W. and S. shores of Reed's Lake (M. & C.); Grand River at Fulton St. Bridge, City.

78. *S. cristata* Engelm.

In shallow water along the "picnic grounds" of Pine Island Lake. Rare. (H. W. Hyser). Aug.

The second time its occurrence has been noted in the State.

79. *S. graminea* Michx.

Plentiful in mud or shallow water on the W. shore of Reed's Lake (O.H.). July-Aug.

80. *S. latifolia* Willd. (*S. variabilis* Engelm.)

In shallow water; common. July-Aug.

All the intermediate forms from broad leaves to narrow lobed leaves are found growing together.

81. *S. rigida* Pursh. (*S. heterophylla* Pursh.)

In mud and water on the W. shore of Reed's Lake. Aug.

HYDROCHARIDACEAE. FROG'S-BIT FAMILY.

ELODEA Michx.

Philotria Raf.82. *E. Canadensis* Michx. Water-weed.

Lake borders and slow streams; common. July-Aug.

VALLISNERIA L. TAPE-GRASS. EEL-GRASS.

83. *V. spiralis* L.

In quiet water; common in Grand River and its larger tributaries. July-Aug.

GRAMINEAE. GRASS FAMILY.

AGROPYRON Gaertn.

84. *A. caninum* R. & S. Awned Wheat-Grass.

Frequent in oak openings. July-Aug.

85. *A. glaucum* R. & S.

James St., near Logan St., City (F.). Mid-June-July.

86. *A. repens* Beauv. Couch-, Quitch-, Quick-, or Quack-Grass.
Fields and waste places; common and exceedingly variable.
Mid-June-July.

87. *A. violaceum* Vasey.
Along the M. C. Ry. and G. R. & I. Ry., north of Burton Ave.,
City. Mid-June-July.
Probably not indigenous. It was discovered here in 1893, and
is increasing (R. E. Matteson).

AGROSTIS L. BENT-GRASS.

88. *A. alba* L. Fiorin or White Bent-Grass. Red-top.
Fields and roadsides; common and extremely variable. July-Aug.

89. *A. perennans* Tuckerm. Thin-Grass.
In moist woods; occasional. July-Oct.
Mill Creek woods; Spruce Lake; Vergennes; Ada; John Ball
Park, City. The latest Agrotis to flower.

90. *A. scabra* Willd. Hair-Grass.
A. hyemalis (Walt.) B.S.P.
In dry or moist soil; common. July-Aug.

ALOPECURUS L. FOXTAIL GRASS.

91. *A. GENICULATUS aristulatus* Torr.
In wet meadows; frequent. June-Aug.

ANDROPOGON L. BEARD-GRASS.

92. *A. furcatus* Muhl.
Light soil; common. Aug.-Oct.

93. *A. scoparius* Michx.
Growing with the preceding; common. Aug.-Oct.

APERÁ Adans.

94. *A. SPICA-VENTI* Beauv.
Edge of John Ball Park, City (Mrs. Mary B. Fallass), June, 1896.

ASPRELLA Willd.

Hystrix Moench.95. A. **Hystrix** Willd. Bottle-brush Grass.

Moist or dry soil; common. July.

On dry soil the culms are very glaucous.

AVENA L. OAT.

96. A. **striata** Michx. Oat-Grass.

Woods; occasional. Mid-May-June.

John Ball Park, City; Burton Ave. Swamp; East St. Pinery; Soldiers' Home woods; bluffs of Scotch Creek; Cedar Swamp.

BOUTELOUA Lag. MESQUITE-GRASS.

97. B. **racemosa** Lag. Grama-Grass.*B. ciliopendula* (Michx.) Torr.

Dry soil. July-Aug.

Bluffs of Plainfield Village; Pine Hill; not abundant.

BRACHYELYTRUM Beauv.

98. B. **erectum** Beauv. (B. aristatum R. & S.)

Moist woods; frequent. July.

BROMUS L. BROME-GRASS.

99. B. **BRIZAEFORMIS** Fisch. & Mey. Quakegrass.

Waysides and waste ground; increasing. June.

100. B. **ciliatus** L.

In moist woods and thickets; common. June-July.

101. B. **ciliatus purgans** (L.) Gray.

Moist woods; frequent. July.

102. B. **Kalmii** Gray. Wild Chess.

Dry open woods; scarce. June-July.

Vergennes; Campau Lake.

103. B. **mollis** L. Soft Chess.*B. hordeaceus* L.

Waste places; occasional. June-July.

Northern part of the City (O.H.).

104. **B. RACEMOSUS** L. Upright Chess.

Becoming frequent along roadsides. June-July.

105. **B. SECALINUS** L. Cheat or Chess.

Common in grain fields. June-July.

106. **B. TECTORUM** L.

Sterile soil. Mid-May-June.

This grass was first noticed in the City on the S. E. corner of Union St. and Wealthy Ave. in 1894, by C. W. Fallass. This is the first station reported in the State. The circumstances attending its appearance were carefully looked up by R. E. Matteson who reports the following: "The grass appeared shortly after a fruit dealer whose fruits were largely imported from Italy, occupied the barn on an adjoining lot. It was his custom to brush out his wagon while crossing this lot."

This is a common grass in Southern Europe, and as it made its appearance immediately after the occupancy of the barn by the fruit dealer, and in such abundance, it seems conclusive that it must have been brought here in the packing material. When discovered it covered the lot and was confined to it. The wind carries the light feathery spikelets and spreads it with great rapidity; from this lot it has spread to all parts of the City, and is now invading the surrounding country.

CALAMAGROSTIS Adans. REED BENT-GRASS.

107. **C. Canadensis** Beauv. Blue-joint.

Open marshes; common. Mid-June-July.

CENCHRUS L. HEDGEHOG OR BUR-GRASS.

108. **C. tribuloides** L.

Sandy soil, fields, and waste places; abundant and troublesome. Aug.-Sept.

CHRYSTOPOGON Trin.

109. **C. avenaceus** (Michx.) Benth. Indian Grass. Wood-Grass.

Dry banks and light soil. Aug.-Sept.

Vergennes; Pine Hill; Lamberton Lake and Creek region; Crooked Lake; central Cannon. Only a few small clumps at any station.

CINNA L. WOOD REED-GRASS.

110. **C. arundinacea** L.

Swamps and low woods; common. Aug.-Sept.

111. **C. latifolia** (Trev.) Griseb. (*C. pendula* Trin.)

Damp woods; rare. July-Aug.

Farm of J. Field near Ballards; Cedar Swamp.

DACTYLIS L. ORCHARD GRASS.

112. **D. glomerata** L.

Shaded places; common. June.

DANTHONIA DC. WILD OAT-GRASS.

113. **D. spicata** Beauv.

Common in dry sandy soil. June.

DESCHAMPSIA Beauv.

114. **D. caespitosa** Beauv.

Wet boggy ground. June.

Feakin's Marsh; Plaster Creek at Madison Ave.; in tamarack marshes along the G. R. & I. Ry. Abundant at these stations.

EATONIA Raf.

115. **E. Pennsylvanica** Gray.

Common in moist woods. June.

ELYMUS L. LYME-GRASS. WILD RYE.

116. **E. Canadensis** L.

River banks and low ground; common. July-Aug.

117. **E. Canadensis glaucifolius** Gray.

Frequent along river banks. July-Aug.

118. **E. striatus** Willd.

Low woods; frequent. July.

119. **E. striatus villosus** Gray.

Frequent along the banks of ravines. July.

120. **E. Virginicus** L.

Frequent along streams. July-Aug.

121. **E. Virginicus glaucus** Beal.

Abundant at the mouth of Bear Creek (H. W. Hyser). July-Aug.

ERAGROSTIS Beauv.

122. **E. Frankii** Steud.

Roadsides in moist ground; frequent. Sept.-Oct.

123. **E. major** Host.

Common in fields and gardens.

124. **E. pectinacea spectabilis** Gray.

Dry sandy soil. July-Oct.

Abundant at the following stations: Pine Hill; north of Englishville; western part of Cannon; Plainfield Village; D. G. R. & W. Ry. Bridge, Thornapple River, Caledonia.

125. **E. Purshii** Schrader.

Roadsides and dry places; frequent. Aug.-Sept.

126. **E. reptans** Nees.

E. hypnoides (Lam.) B.S.P.

Frequent on sandy or gravelly river borders. Aug.-Sept.

FESTUCA L. FESCUE-GRASS.

127. **F. elatior pratensis** Gray. Meadow Fescue.

In meadows. July-Aug.

128. **F. nutans** Willd.

Woods; common. June.

129. **F. ovina** L. Sheep's Fescue.

Dry, oak woods; common. June.

130. *F. ovina pseudovina* Hack.

Hills between Lamberton Lake and Button Lake. June.

Plant described in "Grasses of North America," Dr. W. J. Beal.

131. *F. rubra* L.

Established in the Soldiers' Home woods. June.

132. *F. tenella* Willd.*F. octoflora* Walt.

Sterile soil; frequent. Mid-May-June.

GLYCERIA R. Br. MANNA-GRASS.

Panicularia Fabr.133. *G. Canadensis* Trin. Rattlesnake-Grass.

In marshes about lake borders; occasional. July-Aug.

Mill Lake; Medena Lake; Miller's Lake; Grass Lake; Campau Lake.

134. *G. fluitans* R. Br.

In shallow water or wet places. June-July.

Common and variable.

135. *G. grandis* Watson.*P. Americana* (Torr.) MacM.

Common in marshes. July-Aug.

136. *G. nervata* Trin.

Wet meadows or woods; common. Mid-June-July.

Panicle purple or green.

137. *G. pallida* Trin.

In shallow water and wet places; occasional. June-Mid-July.

Sec. 29, Vergennes; Frawley Lake; N. W. corner of Sec. 12, Alpine; Sec. 14, Grand Rapids; West Bridge St., near the Big Marsh; near Stafford Lake; central Cannon.

GRAPHEPHORUM Desv.

138. *G. melicoideum* Desv.

Along the G. R. & I. Ry., near Fisher Station (R.E. Matteson). Aug.

HIEROCHLOE S. G. Gmel. Holy Grass.
Sarrastana Schrank.

139. **H. borealis** R. & S. Vanilla or Seneca Grass.
S. odorata (L.) Scribn.
 Wet boggy marshes; occasional. Mid-May-June.
 Plaster Creek at Madison Ave.; Salt Spring; bank of Grand River opposite Grandville.
 In the northern part of the State, the Indians weave this grass into baskets.

HORDEUM L.

140. **H. jubatum** L. Squirrel-tail Grass.
 In dry soil; scarce. July-Aug.
 N. E. corner of Sec. 9, Alpine (H. C. Smith); South Division St. at Silver Creek.

KOELERIA Pers.

141. **K. cristata** Pers.
 Frequent in oak openings. June.

LEERSIA Swartz. WHITE GRASS.
Homalocenchrus Mieg.

142. **L. oryzoides** Swartz. Rice Cut-grass.
 Abundant in wet places. Aug.-Sept.
 143. **L. Virginica** Willd.
 Swamps or wet woods; frequent. Aug.-Sept.

LOLIUM L. DARNEL.

144. **L. PERENNE** L. Common Darnel. Ray- or Rye-Grass.
 Lawns and along streets. June-Oct.

MILIUM L. MILLET-GRASS.

145. **M. effusum** L.
 Frequent in wet woods; June.

MUHLENBERGIA Schreb. DROP-SEED GRASS.

146. **M. diffusa** Schreb. Nimble Will.
 Open shaded grounds; frequent about dwellings. Aug.-Sept.

147. *M. glomerata* Trin.

M. racemosa (Michx.) B. S. P.

Wet meadows; occasional. Aug.-Sept.

148. *M. Mexicana* Trin.

Frequent in wet shaded places. Aug.-Sept.

149. *M. sylvatica* Torr. & Gray.

In moist woods and along streams. Aug.-Sept.

Cedar Swamp, near the Blendon Road; Rouge River, near Plainfield Village.

150. *M. Willdenovii* Trin.

M. tenuiflora (Willd.) B. S. P.

Soldiers' Home woods. Rare. Sept.

ORYZOPSIS Michx. MOUNTAIN RICE.

151. *O. asperifolia* Michx.

Common in rich woods. May.

152. *O. Canadensis* Torr.

O. juncea (Michx.) B. S. P.

Sterile soil; infrequent. May.

Bluffs along Scotch Creek, Sec. 20, Plainfield; hills west of the Lower Swing Bridge (R.E.Matteson).

153. *O. melanocarpa* Muhl.

Rich woods; rare. July.

Soldiers' Home woods; east line of Sec. 17, Wright (H.C. Smith).

PANICUM L. PANIC-GRASS.

154. *P. boreale* Nash.

Moist soil. Summer.

Along Hogadone Road; marshes along the G. R. & I. Ry.; Scotch Lake.

This is the second station reported in the State.

155. *P. capillare* L. Old-witch Grass.

A common weed in dry soil. July-Sept.

156. **P. clandestinum** L.

Moist woods and thickets; rare. June-July.

Plaster Creek at Madison Ave.; Glue Factory woods; Cascade Springs.

157. **P. commutatum** Schultes.

Dry woods and thickets. July-Aug.

Mill Creek woods (O.H.).

The only station reported in the State.

158. **P. CRUS-GALLI** L. Barnyard-Grass.

In rich soil of cultivated or waste ground; common and variable.

Aug.-Sept.

159. **P. CRUS-GALLI HISPIDUM** Torr.

P. Walteri Pursh.

Banks of Grand River, near the Lower Swing Bridge (O.H.).

Aug-Sept.

160. **P. depauperatum** Muhl.

Sterile soil; variable and common. June-Sept.

161. **P. dichotomum** L.

Dry woods and copes; common and variable. June-July.

162. **P. flexile** (Gattinger) Seribn.

Wet marly soil. Aug.

Abundant in the Lamberton Lake region (M. & C.).

163. **P. GLABRUM** Gaud.

Syntherisma linearis (Krock.) Nash.

Common in sterile soil. July-Aug.

164. **P. latifolium** Walt.

P. Porteriannum Nash.

Edges of woods; common. Mid-June-July.

165. **P. MILIACEUM** L. Millet.

Waste places. July-Sept.

At the corner of Jefferson Ave. and Burton Ave., City (O.H.).

166. **P. nitidum** Lam.

Dry soil. June.

South Grand Rapids; Upper River Road.

167. **P. pubescens** Lam.

Dry soil; frequent. June.

South Grand Rapids; Hogadone Road; Cannon.

168. **P. SANGUINALE** L. Common Crab- or Finger-Grass.

Syntherisma sanguinalis (L.) Nash.

Waste places; common. Aug.-Sept.

169. **P. scoparium** Watson.

P. Scribnérianum Nash.

Frequent in light sandy soil. June-July.

170. **P. virgatum** L.

Moist or dry soil along streams and lakes; infrequent. Aug.-Sept.

Cascade Springs; Bostwick Lake; Lower Swing Bridge; Ada Village.

PHALARIS L. CANARY-GRASS.171. **P. arundinacea** L. Reed Canary-Grass.

Moist or wet soil; common. June-July.

172. **P. arundinacea** PICTA (Hort.) Ribbon-Grass.

Cultivated in gardens. June-July.

Established in a marsh, near the north line of Sec. 6, Walker (H.C. Smith).

173. **P. CANARIENSIS** L. Canary-Grass.

Waste ground; rare. July-Aug.

Jefferson Ave., south of Silver Creek, City (R.E. Matteson); west bank of Grand River, near the G. R. & I. Ry. Bridge, City (F.).

PHLEUM L. CAT'S-TAIL GRASS.174. **P. PRATENSE** L. Timothy. Herd's-Grass.

A common meadow grass. June.

PHRAGMITES Trin. REED.175. **P. communis** Trin.*P. Phragmites* (L.) Karst.

In swamps and wet places; infrequent. Sept.-Oct.

Saddle-Bag Swamp; Reed's Lake; Lamberton Lake; Stafford Lake; Mud Lake, Wright; Mud Lake, Jamestown; Byron Center.

POA L. MEADOW-GRASS. SPEAR-GRASS.176. **P. alsodes** Gray.

Wooded banks of brooks; frequent. May-June.

177. **P. annua** L. Low Spear-Grass.

A lawn grass; common. May-Oct.

178. **P. compressa** L. Wire-Grass. English Blue-Grass.

A pasture Grass; common and variable. June-Aug.

179. **P. debilis** Torr.

Moist rich woods; occasional. May-June.

Soldiers' Home woods; Sec. 29, Vergennes; along the River Road.

180. **P. flexuosa** Muhl.*P. autumnalis* Muhl.

In wet woods; rare. May-June.

Burton Ave. Swamp; Stafford Lake.

The plant that occurs here is probably related to *P. flexuosa*.

Our plant has not been satisfactorily identified.

181. **P. pratensis** L. Kentucky Blue-Grass. June Grass.

A common pasture and meadow grass. It forms the basis of all our pastures. June.

182. **P. serotina** Ehrh. False Red-top. Fowl Meadow-Grass.*P. flava* L.

Wet meadows; common. June-July.

183. **P. sylvestris** Gray.

Moist beech and maple woods; rare. June.

Woods east of Kinney Station; south branch of Lamberton Creek, south of the Knapp Road.

SETARIA Beauv. Bristly Foxtail Grass.*Leptophorus* Schlecht.

184. **S. glauca** Beauv. Foxtail. Pigeon-Grass.
Common in waste or cultivated ground. July–Aug.

185. **S. italicica** R. & S. Millet. Hungarian Grass.
Escaped cultivation. July–Sept.

186. **S. viridis** Beauv. Green Foxtail. Bottle-Grass.
Fields and waste places; common. July–Sept.

SPARTINA Schreb. CORD or MARSH GRASS.

187. **S. cynosuroides** Willd. Fresh-water Cord-Grass.
Frequent in wet places. Aug. Sept.

SPOROBOLUS R. Br. DROP-SEED GRASS. RUSH-GRASS.

188. **S. cryptandrus** Gray.
In dry sand at Pine Hill; scarce. Aug.–Sept.

189. **S. neglectus** Nash.
Sterile soil. Aug.–Sept.
Especially common along dry sandy roadsides.

190. **S. vaginæflorus** (Torr.) Wood.
Dry sterile soil. Aug. Sept.
Cascade Springs along the Ada Road; along the “cart road,” north of Lamberton Lake. Abundant at these stations.

STIPA L. FEATHER-GRASS.

191. **S. avenacea** L. FEATHER-GRASS.
Oak openings; abundant. May–June.

192. **S. spartea** Trin. Porcupine Grass.
Dry soil along the D. G. H. & M. Ry. June–July.

ZIZANIA L. WATER or INDIAN RICE.

193. **Z. aquatica** L. Indian Rice. Water Oats.
Common in shallow water of Grand River. Last of July–Aug.

CYPERACEAE. SEDGE FAMILY.

CAREX L. SEDGE.

194. **C. Albursina** Sheldon. (*C. laxiflora latifolia* *Boott.*)
In rich woods, prefers beech and maple; common. May-June.

195. **C. alopecoidea** Tuckerm.
In woods about the Glue Factory; rare. Mid-June-Mid-July.

196. **C. aquatilis** Wahl.
In water along creek and lake borders. June-July.
Stafford Lake; abundant in the marshes about Lamberton Lake.

197. **C. arctata** *Boott.*
Frequent in moist rich woods. June-July.
Secs. 14 and 25, Jamestown; Mr. Gormley's woods, Sec. 2,
Walker; Alpine, etc.

198. **C. aurea** Nutt.
In moist marly soil; scarce. June-Mid-July.
Pine Island Lake; Mud Lake, Wright; Larkins' Lake.

199. **C. bromoides** Schkuhr.
Common in low woods. June.

200. **C. canescens** L.
Frequent on the borders of sphagnum swamps. Mid-May-June.

201. **C. canescens vulgaris** Bailey.
C. brunneescens gracilior Britton.
Found with the species; common. Mid-May-June.

202. **C. Careyana** Torr.
Rich moist woods; local. Mid-May-Mid-June.
Soldiers' Home Woods (Prof. C.F. Wheeler); woods south of
Reed's Lake (M.&C.); woods near Bronner Lake.

203. **C. cephaloidea** Dewey.
Dry fields and copses; scarce. Mid-June-July.
Soldiers' Home woods; Farm of V. Harrington, Sec. 2, Walker.

204. **C. cephalophora** Muhl.
In dry shaded places; common. June-July.

205. **C. communis** Bailey.
C. pedicellata (Dewey) Britton.
Frequent on rich shaded banks. May-Mid-June.

206. **C. communis Wheeleri** Bailey.
C. pedicellata Wheeleri (Bailey) Britton.
S. B. Smith's woods, Sec. 14, Grand Rapids. May-Mid-June.

207. **C. comosa** Boott. (*C. Pseudo-Cyperus Americana* Hochst.)
Frequent on lake margins. June-July.

208. **C. conoidea** Schkuhr.
In wet ground along Silver Creek, near Oakdale Station (Prof. C. F. Wheeler); scarce. May-June.
In the M. A. C. Herbarium.

209. **C. crinita** Lam.
A common sedge in marshes. June-July.

210. **C. Davisii** Schwein. & Torr.
In rich shaded soil along the bank of Grand River between the Glue Factory and the Salt Spring (F.). Last of May-June.
Rare in Mich.

211. **C. Deweyana** Schwein.
Frequent in dry woods. June.

212. **C. digitalis** Willd.
In oak woods; frequent. June-Mid-July.

213. **C. digitalis copulata** Bailey.
In moist beech and maple woods; infrequent. June-Mid-July.
Woods of J. H. Edison and V. Harrington, Sec. 2, Walker;
woods of J. Hinebeek, Sec. 12, Alpine.

214. **C. filiformis** L.
Marshy ground; infrequent. June.
Reed's Lake; Crooked Lake; Lamberton Lake.

215. **C. flava** L.

Common in marshes. June-July.

The variety *graminiflora* Bailey is included in the species.

216. **C. fernosa** Dewey.

Soldiers' Home woods (Prof. C. F. Wheeler), May, 1895.

In the M. A. C. Herbarium. A rare sedge in Mich.

217. **C. fusca** All.

In boggy ground; local. Last of May-June.

Abundant about Lamberton Lake and its marshes; Feakin's Marsh; Stafford Lake.

218. **C. gracillima** Schwein.

In moist shaded soil; frequent. Last of May-June.

219. **C. granularis** Muhl.

Not infrequent in grassy meadows and wet places. June.

220. **C. granularis Haleana** Porter.

C. granularis Shireri Britton.

Frequent in low, clayey ground. June-July.

221. **C. Grayii** Carey.

C. Asa-Grayi Bailey.

Frequent in alluvial soil. Mid-June-Aug.

Along Grand River at the Soldiers' Home, Plainfield Village, Ada Village; Fisher Station; the Outlet.

222. **C. grisea** Wahl.

In moist shaded soil; infrequent. Mid-May-June.

Soldiers' Home woods.

223. **C. Hitchcockiana** Dewey.

Frequent in woods and thickets. Mid-June-Mid-July.

224. **C. hystricina** Muhl.

Common in swamps and low meadows. June-July.

The spikes are sometimes compound at the base.

225. **C. interior** Bailey.

Wet soil; common. May-June.

226. *C. intumescens* Rudge.
In wet woods; common. June-July.

227. *C. lanuginosa* Michx. (*C. filiformis latifolia* Boeckl.)
Bogs and low ground; common. Mid-May-June.

228. *C. laxiflora* Lam.
In beech and maple woods; common and exceedingly variable.
May-June.

229. *C. laxiflora patulifolia* Carey.
Common in moist beech and maple woods. May-June.

230. *C. laxiflora striatula* Carey.
C. laxiflora blanda (Dewey) Boott.
In moist woods; common. June-July.

231. *C. laxiflora varians* Bailey.
Frequent in moist woods. May-June.

232. *C. limosa* L.
In sphagnum bogs. June-July.
Orchid Swamp (Prof. C. F. Wheeler); Thompson's Lake.

233. *C. longirostris* Torr.
In a moist thicket on the bank of Plaster Creek, south-east of
the City (F.). June.
Rare in the State.

234. *C. lupulina* Muhl.
In swamps and low ground; abundant and variable. Mid-June-
July.

235. *C. lupulina pedunculata* Dewey.
Found growing with the species but less frequent. Mid-June-
July.
Edges of Cedar Swamp; Farm of Mrs. Jane Banks, Sec. 21, Ada.

236. *C. lurida* Wahl.
In wet meadows and along streams; frequent. June-July.

237. *C. monile* Tuckerm.
Margin of Crooked Lake; scarce. June-July.

238. **C. Muhlenbergii** Schkuhr.

Dry fields and hills; frequent. June-July.

239. **C. Muskingumensis** Schwein.

Wooded alluvial soil. June-July.

Along Grand River at Plainfield Village; Soldiers' Home woods; abundant on the Farm of Mrs. Jane Banks, Sec. 21, Ada.

Rare in the State.

240. **C. oligosperma** Michx.

In sphagnous bogs; infrequent. July.

Miller's Lake; Bronner Lake; Thompson's Lake.

241. **C. pauciflora** Lightf.

In sphagnum about Mud Lake, Plainfield; rare. June-July.

242. **C. pedunculata** Muhl.

On mounds in low woods. April-May.

Orchid Swamp and Burton Ave. Swamp.

Our earliest sedge.

243. **C. Pennsylvanica** Lam.

Common in dry woods, often forming large patches. April-June.

Our commonest sedge.

244. **C. plantaginea** Lam.

Frequent in low woods. May-June.

245. **C. polytrichoides** Muhl.

C. leptalea Wahl.

Low ground; common. May-June.

Exceedingly variable in size.

246. **C. Pseudo-Cyperus.** L.

A few plants grow along the south side of the Salt Spring marsh. Mid-June-July.

247. **C. pubescens** Muhl.

In beech and maple woods; frequent. June-July.

Soldiers' Home woods; near Hudsonville; Alaska; Sec. 12, Tallmadge; Sec. 14, Grand Rapids.

248. *C. retrorsa* Schwein.

Frequent in swamps. July-Aug.

249. *C. riparia* Curtis.

Common in swamps and swales. June-July.

250. *C. rosea* Schkuhr.

Frequent in moist woods and thickets. May-June.

251. *C. rosea radiata* Dewey.

Dry woods; frequent. May-June.

252. *C. Sartwellii* Dewey.

In swamps; infrequent. June-July.

Crooked Lake; Reed's Lake; Fisk Lake.

253. *C. scabrata* Schwein.

Banks of streams and wet thickets; infrequent. Mid-June-July.

Clay ravines, Sec. 5, Georgetown; Soldiers' Home Woods.

254. *C. scoparia* Schkuhr.

Low ground, everywhere. June-July.

255. *C. siccata* Dewey.

Dry sterile copses; occasional. June.

Bluffs along Hogadone Road, east of Hogadone Creek; central Cannon.

256. *C. sparganioides* Muhl.

Rich shaded banks and thickets; frequent. June-July.

Jamestown; bluffs of Plaster Creek; John Ball Park, City; Reed's Lake; Vergennes.

257. *C. sterilis* Willd.

Swales; common. May-June.

258. *C. sterilis cephalantha* Bailey.

Found growing with the species; frequent. May-June.

259. *C. stipata* Muhl.

Common in wet soil. June-July.

260. **C. straminea** Willd.

Frequent in moist rich woods. Mid-May-June.

261. **C. straminea alata** Bailey.

C. alata Torr.

In wet ground; rare. June-July.

The "big ravine" near Harris' Landing.

262. **C. straminea brevior** Dewey.

C. festucacea Willd.

Common in dry soil. May-June.

263. **C. straminea ferruginea** Gray.

In wet ground; occasional. Mid-June-July.

Mill Lake; Big Marsh; Tobey Lake.

264. **C. straminea mirabilis** Tuckerm.

Frequent in rich moist woods. June.

265. **C. stricta** Lam.

In wet boggy ground; frequent. June-July.

Exceedingly variable.

266. **C. tenuilla** Schkuhr.

Sphagnous swamps; infrequent. June.

Bailey Lake; Mud Lake, Plainfield.

267. **C. tenuiflora** Wahlenb.

Abundant in boggy ground about Bailey Lake. Mid-May-June.

Rare in the State.

268. **C. teretiuscula** Gooden.

Common in wet soil. Last of May-June.

269. **C. teretiuscula ramosa** Boott.

C. teretiuscula prairea (Dewey) Britton.

Found growing with the species. Last of May-June.

270. **C. tetanica** Schkuhr.

In meadows and wet woods; infrequent. Last of May-June.

Burton Ave. Swamp; Lamberton Lake marsh; Plaster Creek at Madison Ave.; Stafford Lake.

271. *C. tetanica* Woodii Bailey.

In wet woods near the Paris Town Hall. Mid-May-June.

272. *C. tribuloides* Wahl.

Abundant in swales and wet meadows. July.

273. *C. tribuloides* Bebbii Bailey.

Frequent in wet soil. June-July.

274. *C. tribuloides cristata* Bailey.

C. cristatella Britton.

Common in swales. July.

275. *C. tribuloides reducta* Bailey.

C. tribuloides moniliformis (Tuckerm.) Britton.

In moist beech and maple woods, Sec. 14, Jamestown. July.

276. *C. triceps hirsuta* Bailey.

Dry soil; rare. June-July.

Kalamazoo Ave. on the edges of a woods near Burton Ave.

277. *C. trichocarpa* Muhl.

In marshes and wet meadows; infrequent. June-July.

N. W. $\frac{1}{4}$ of Sec. 2, Walker; S. B. Smith's woods, Sec. 14, Grand Rapids.

278. *C. trisperma* Dewey.

Frequent in sphagnum swamps. Mid-June-July.

279. *C. Tuckermani* Dewey.

In swamps; frequent. June-July.

280. *C. utriculata* Boott.

In mud and water along Bear Creek. June-Aug.

281. *C. varia* Muhl.

Moist rich woods; occasional. June.

East St. Pinery; Paris Town Hall.

282. *C. virescens* Muhl.

In rich shaded ground; frequent and well distributed. Last of June-July.

283. **C. virescens costata** Dewey.

C. costellata Britton.

In woods; less frequent than the species. Last of June-July.
East St. Pinery; Pine Island Lake.

284. **C. viridula** Michx. (C. flava viridula Bailey.)

Margins of lakes; frequent. Summer.

285. **C. vulpinoidea** Michx.

Common in swamps and wet meadows. June-July.

CLADIUM P. Br. Twig-Rush.

286. **C. mariscoides** Torr.

Frequent in shallow water about lake margins. July-Sept.
Pine Island Laké; Gold Lake; Button Lake; Grass Lake; Mud
Lake, Wright; Larkins' Lake; Campau Lake, etc.

CYPERUS L. GALINGALE.

287. **C. aristatus** Boeckl.

C. inflatus Muhl.

Frequent in wet sand along the banks of Grand River. Aug.-Sept.

288. **C. diandrus** Torr.

Low ground; common. Aug.-Sept.

289. **C. diandrus castaneus** Torr.

C. rivularis Kunth.

Found growing with the species; common. Aug.-Sept.

290. **C. Engelmanni** Steud.

In wet soil; rare. Aug.-Sept.

Crooked Lake.

291. **C. erythrorhizos** Muhl.

Wet soil; infrequent. Aug.-Sept.

Reed's Lake; Grand River at Soldiers' Home; Pine Island Lake.

292. **C. esculentus** L.

Common in moist places. July-Sept.

A troublesome weed.

293. *C. filiculmis* Vahl.

Sterile soil; common. June-Aug.

294. *C. speciosus* Vahl.

Low ground; rare. Sept.-Oct.

Crooked Lake; Soft Water Lake; Plainfield Village.

295. *C. strigosus* L.

Frequent on low ground. Aug.-Oct.

DULICHIUM L. C. Richard.

296. *D. spathaceum* Pers.*D. arundinaceum* (L.) Britton.

Marshes and lake borders; common. July-Oct.

ELEOCHARIS R. Br. SPIKE-RUSH.

297. *E. acicularis* R. Br. Spike-Rush.

In wet places; common. July-Sept.

298. *E. acuminata* (Muhl.) Nees. (E. compressa *Sullivant.*)

In wet places. July-Aug.

Silver Lake; Bostwick Lake; Stafford Lake; Bronner Lake; Lower Swing Bridge; near Kinney Station.

299. *E. Engelmanni detonsa* Gray.

In wet sand about Soft Water Lake. Sept.-Oct.

This Variety described by M. L. Fernald in "Proceedings of American Academy of Arts and Sciences," Vol. XXXIV, No. 19.—April, 1899.

300. *E. intermedia* Schultes.

In wet soil. July-Sept.

Pine Island Lake; Larkins' Lake; Stafford Lake; West Omens Lake; Plainfield Village; Lamberton Lake region. Abundant at these stations.

301. *E. mutata* (L.) R. & S. (E. quadrangulata R. Br.)

Abundant in shallow water at the east end of Reed's Lake. July-Aug.

302. *E. obtusa* Schultes.

In wet soil. July-Aug.

Crooked Lake; Vergennes.

Described by M. L. Fernald in "Proceedings of American Academy of Arts and Sciences," Vol. XXXIV, No. 19.—April, 1899.

303. *E. olivacea* Torr.

Abundant in wet mud on the shores of Stafford Lake and Crooked Lake. Aug.-Sept.

Rare in the State. These are the most westerly stations known for this species in the State.

304. *E. ovata* Heuseri Uechtritz.

In wet sand. Sept.-Oct.

Silver Lake; Soft Water Lake.

Described by M. L. Fernald in "Proceedings of American Academy of Arts and Sciences," Vol. XXXIV, No. 19.—April, 1899.

305. *E. palustris* R. Br.

Common in marshes and in shallow water. July-Sept.

306. *E. palustris glaucescens* Gray.

Frequent in wet meadows and marshes. July-Aug.

Pickerel Lake, Plainfield; the Outlet; Frawley Lake; Campau Lake.

307. *E. palustris vigens* Bailey.

Abundant in shallow water at Reed's Lake. July-Aug.

308. *E. rostellata* Torr.

In marshy marshes. July-Sept.

Salt Spring marsh; Lower Swing Bridge; Lamberton Lake.

309. *E. tenuis* Schultes.

In wet soil. July.

Lamberton Lake; Fisk Lake; Vergennes; Silver Lake.

ERIOPHORUM L. COTTON-GRASS.310. *E. gracile* Koch.

Sphagnous bogs; rare. Mid-May-Mid-June.

Button Lake; Bronner Lake.

311. *E. polystachyon* L.

Sphagnous swamps; frequent and well distributed. Mid-May-June.

312. *E. vaginatum* L.

Sphagnous bogs; rare. Mid-May-Mid-June.
Round Lake; Bronner Lake.

313. *E. Virginicum* L.

Sphagnous swamps; occasional. July-Aug.
Saddle-Bag Swamp region; Orchid Swamp; Spruce Lake;
Campau Lake, etc.

314. *E. Virginicum album* Gray.

Wet soil along Plaster Creek (F.). July-Aug.

FIMBRISTYLIS Vahl.315. *F. autumnalis* R. & S.

Moist soil of lake borders. Aug.-Sept..

Abundant at the following stations: Pine Island Lake; N. W. shore of Crooked Lake; Silver Lake; Bostwick Lake; Lamber-ton Lake.

316. *F. capillaris* Gray.

Stenophyllum capillaris (L.) Britton.

In dry sand; abundant but local. July-Aug.

Campau Lake at Whitneyville Creek; S. shore of Bostwick Lake; Little Bostwick Lake.

FUIRENA Rottb. UMBRELLA-GRASS.317. *F. squarrosa pumila* Torr.

In mud along the N. W. shore of Crooked Lake; rare. July-Sept.

HEMICARPHA Nees.318. *H. subsquarrosa* Nees.

H. micrantha (Vahl.) Britton.

Wet sandy lake margins; infrequent. July-Oct.
Bostwick Lake; Silver Lake; Soft Water Lake. Plentiful at these stations.

PSILOCARYA Torr. BALD-RUSH.319. **P. scirpoides** Torr.

Abundant in mud on the margin of Crooked Lake. Aug.-Sept.
The only station known in the State.

RYNCHOSPORA Vahl. BEAK-RUSH.320. **R. alba** Vahl.

Sphagnous bogs; frequent. Mid-July-Aug.
Miller's Lake; Frawley Lake; Carmody Lake; Gold Lake;
Bronner Lake, etc.

321. **R. capillacea** Torr.

In marly soil; local. July-Aug.
Campau Lake; Clear Lake; along a spring brooklet on the Farm
of L. N. Wade, Secs. 31 and 32, Plainfield.

322. **R. capillacea leviseta** Hill.

In wet marly soil; local. July-Aug.
Lamberton Lake (M. & C.); Button Lake; Campau Lake.

323. **R. glomerata** Vahl.

In wet marly meadows; occasional. July-Aug.
Oak Hill Farm, See. 32, Vergennes; Gold Lake; Campau Lake;
Soft Water Lake; Little Bostwick Lake; Farm of J. W. Ames,
Sec. 4, Ada; Crooked Lake.

324. **R. macrostachya** Torr.

R. corniculata macrostachya (Torr.) Britton.

In wet soil at Crooked Lake; rare. July-Aug.
This species has been reported from only one other station in
the State.

SCIRPUS L. BULRUSH OR CLUB-RUSH.325. **S. atrovirens** Muhl.

Common in swamps. July-Aug.
The inflorescence is exceedingly variable.

326. *S. cyperinus* *Eriophorum* (Michx.) Britton.
(*Eriophorum cyperinum laxum* Wats. & Coul.)
Common in swamps. Aug.-Sept.

327. *S. debilis* Pursh.
Abundant in moist sand along the N. shore of West Omens Lake. Aug.-Sept.
Rare in the State—the third station reported.

328. *S. lacustris* L. Great Bulrush.
In shallow water of marshes and lakes; common. July-Aug.

329. *S. lineatus* Michx. (*Eriophorum lineatum* Benth. & Hook.)
In wet meadows; frequent. June-July.
Well distributed throughout our district.

330. *S. microcarpus* Presl. (*S. sylvaticus* *digynus* Boeckl.)
In swampy places; frequent. June-July.

331. *S. Olneyi* Gray.
Abundant in the marsh about the Salt Spring. July-Aug.
Reported from only one other station in the State.

332. *S. pauciflorus* Lightf. (*Eleocharis pauciflora* Link.)
Abundant in the marshy borders of Lamberton Lake; Fenness Lake; Campau Lake; Stafford Lake. June-Sept.

333. *S. pungens* Vahl.
S. Americana Pers.
Marshes and lake margins; common. July-Sept.

334. *S. Smithii* Gray.
In wet muddy places; local. July-Sept.
N. W. shore of Crooked Lake; Grass Lake; abundant on the W. shore of Silver Lake; Bostwick Lake; Miller's Lake.
This species has been mentioned but once before in the State.

335. *S. Torreyi* Olney.
On the margin of Pine Island Lake at the "picnic grounds."
Rare. July-Aug.

SCLERIA Berg. Nut-Rush.336. **S. verticillata** Muhl.

Abundant in moist grassy places about the margins of Button Lake and Morgan Lake. Local. July-Sept.
Rare in the State, only one station previously mentioned.

ARACEAE. ARUM FAMILY.**ACORUS** L. SWEET FLAG. CALAMUS.337. **A. Calamus** L.

Sedgy places; infrequent. June.

Marsh about Spruce Lake; Thornapple River, near Cascade Springs; Grand River, near the Lower Swing Bridge; marshes about Campau Lake; Plainfield Village.

ARISAEMA Mart. INDIAN TURNIP. DRAGON ARUM.338. **A. Dracontium** Schott. Green Dragon. Dragon-root.

Shaded alluvial soil; scarce. May.

Along Plaster Creek between the M. C. Ry. and the G. R. & I. Ry. (Edward Raiguel); Rouge River, near its mouth; along Grand River at North Park (O.H.); Farm of Mrs. Jane Banks, Sec. 21, Ada; Glue Factory woods.

339. **A. triphyllum** Torr. Indian Turnip.

Common in rich moist woods. May.

CALLA L. WATER ARUM.340. **C. palustris** L.

Low swamps and sphagnum bogs; scarce. Last of May-June.
Abundant at Saddle-Bag Swamp until 1895; roadside between Secs. 30 and 31, also between Secs. 31 and 32, Vergennes; Carmody Lake; Baumhoff Lake; Bronner Lake; roadside between Secs. 8 and 9, Alpine. Double spathes are occasional.

PELTANDRA Raf. ARROW ARUM.341. **P. undulata** Raf.

P. Virginica (L.) Kunth.

Common in shallow water about lakes. June.

SYMPLOCARPUS Salisb. SKUNK CABBAGE.

Spathiphyllum Raf.342. *S. foetidus* Mutt.

Common in swamps and wet ground. April.

Inflorescence with double spathes is occasional.

LEMNACEAE. DUCKWEED FAMILY.

LEMNA L. DUCKWEED. DUCK'S-MEAT.

343. *L. minor* L.

Common in still water.

344. *L. polyrrhiza* L. (Spirodela polyrrhiza Schleid.)

In lakes, pools, and shallow water; abundant.

345. *L. trisulca* L.

Frequent in ponds and lakes.

WOLFFIA Horkel.

346. *W. Brasiliensis* Weddell.

Floating on stagnant water in Mud Lake, Jamestown.

347. *W. Columbiana* Karst.

Floating just beneath the surface of the water in a stagnant pool, south of Steele's Corners.

XYRIDACEAE. YELLOW-EYED-GRASS FAMILY.

XYRIS L. YELLOW-EYED GRASS.

348. *X. flexuosa* Muhl.

Abundant in moist soil on the shore of Little Bostwick Lake.

July-Aug.

ERIOCAULEAE. PIPEWORT FAMILY.

ERIOCAULON L.

349. *E. septangulare* With.

In mud or shallow water; abundant but local. July-Aug.

Pine Island Lake; Mud Lake, Plainfield; Bostwick Lake; Little Bostwick Lake.

Infrequent in the State.

COMMELINACEAE. SPIDERWORT FAMILY.**TRADESCANTIA** L. SPIDERWORT.

350. **T. Virginica** L. Common Spiderwort.

Dry sandy soil; common. June-Sept.

PONTEDERIACEAE. PICKEREL-WEED FAMILY.**HETERANTHERA** R. & P. MUD-PLANTAIN.

351. **H. graminea** Vahl.

H. dubia (Jacq.) MacM.

Lakes and still streams; common. July-Oct.

PONTEDERIA L. PICKEREL-WEED.

352. **P. cordata** L.

Borders of lakes and slow streams; common. July-Aug.

JUNCACEAE. RUSH FAMILY.**JUNCUS** L. RUSH. BOG-RUSH.

353. **J. acuminatus** Michx.

In wet places; infrequent. July.

Pickerel Lake; Pine Island Lake; West Omens Lake.

354. **J. articulatus** L.

Moist ground; rare. July.

Margin of Gold Lake; Round Lake.

Rare in the State.

355. **J. Balticus** Willd.

Sandy shores of Silver Lake. June.

Common on the shores of the Great Lakes; rare in the interior.

356. **J. brachycephalus** (Engelm.) Buch.

Wet sandy places; frequent. Aug.

Stafford Lake; Bostwick Lake; Silver Lake; Spruce Lake; Farm of L. N. Wade, Secs. 31 and 32, Plainfield.

357. *J. bufonius* L.

Wet shores and low places; not uncommon. July.

358. *J. Canadensis* J. Gay.

Common in marshes. Aug.

The variety *longicaudatus* Engelm. is included in the species.

359. *J. Canadensis coarctatus* Engelm.

J. Canadensis brevicaudatus Engelm.

In wet sand; rare. Aug.-Sept.

Silver Lake; Little Bostwick Lake.

360. *J. effusus* L. Common or Soft Rush.

Low ground; common. July.

361. *J. marginatus* Rostk.

In moist soil; rare. Aug.

Grand Rapids (Prof. C. F. Wheeler).

In M. A. C. Herbarium—destroyed by fire in 1890.

362. *J. nodosus* L.

Wet places; common. July.

363. *J. nodosus megacephalus* Torr.

J. Torreyi Coville.

There is a small patch by the roadside between Sees. 5 and 6, Alpine, on the Farm of E. Miller. Rare. Aug.

364. *J. pelocarpus* E. Meyer.

Shores of lakes in moist sand; abundant but local. Aug.-Sept.

Pine Island Lake; Bostwick Lake; Silver Lake; Little Bostwick Lake.

365. *J. tenuis* Willd.

Common along paths and roadsides, variable. July-Aug.

LUZULA DC. Wood-Rush.

Juncoides Adans.

366. *L. campestris* DC.

Dry woods; frequent. May.

367. **L. vernalis** DC.*J. pilosum* (L.) Kuntze.

Woods; common. Mid-April-May.

LILIACEAE. LILY FAMILY.

ALETRIS L. COLIC-ROOT. STAR-GRASS.

368. **A. farinosa** L.

Moist sandy soil; rare. July.

Along the D. G. H. & M. Ry., east of the City; roadside east of Campau Lake.

ALLIUM L. ONION. GARLIC.

369. **A. Canadense** L. Wild Garlic.

Common in low woods. Mid-May-Mid-June.

370. **A. tricoccum** Ait. Wild Leek.

Common in rich woods. July.

ASPARAGUS L. ASPARAGUS.

371. **A. officinalis** L. Garden Asparagus.

Escaped from gardens; occasional. June.

CLINTONIA Raf.

372. **C. borealis** Raf.

Cold woods or sphagnous swamps; occasional. Mid-May-June.

Burton Ave. Swamp (Charles Wise); Mill Creek woods (O.H.);

Cedar Swamp; Sec. 25, Jamestown; Secs. 30 and 31, Byron.

Blossoms and fruits sparingly here.

ERYTHRONIUM L. DOG'S-TOTH VIOLET.

373. **E. albidum** Nutt. White Dog's-tooth Violet.

Rich woods; scarce. Mid-April-Mid-May.

Near the Indian Mounds (B.E.L.); woods near the Glue Factory (R.E.Matteson); Mill Creek woods (S.O.L.); woods of H.

L. Dickerson, west line of Sec. 12, Tallmadge (Roy Tucker).

374. **E. Americanum** Ker. Yellow Adder's-tongue.
Moist thickets; common. Mid-April-Mid-May.

HEMEROCALLIS L. DAY-LILY.

375. **H. fulva** L. Common Day-Lily.
Escaped from gardens; occasional. July-Aug.

LILIU M L. LILY.

376. **L. Philadelphicum** L. Wild Orange-red Lily.
Dry woods and thickets; infrequent. Mid-June-Mid-July.
Mill Creek woods (Charles Falls); D. G. H. & M. Ry., east of City; G. R. & I. Ry., south of Burton Ave. (O.H.); Crooked Lake (Harry Brandau).

377. **L. superbum** L. Turk's-cap Lily.
In swamps and meadows; occasional. July.

MAIANTHEMUM Wigg.
Unifolium Adans.

378. **M. Canadense** Desf.
Common in moist woods. June.

MEDEOLA L. INDIAN CUCUMBER-ROOT.

379. **M. Virginiana** L.
Moist woods and copses; infrequent. June.
Pine Island Lake; Mill Creek woods; Burton Ave. Swamp; Mud Lake, Wright; Vergennes; Cedar Swamp; Scotch Creek, Well distributed, but not abundant at any station.

MUSCARI Mill. GRAPE-HYACINTH.

380. **M. botryoides** (L.) Mill.
Near dwellings; occasional. May.
Escaped from a garden to the roadside, south of the Swing Bridge, near the River Road, where it is abundant.

POLYGONATUM Adans. SOLOMON'S SEAL.381. **P. biflorum** Ell. Smaller Solomon's Seal.

Open woods; common. May.

382. **P. giganteum** Dietrich. Great Solomon's Seal.*P. commutatum* (R. & S.) Dietrich.

In wet woods or in dry ground; frequent. Mid-May-Mid-June.

SMILACINA Desf. FALSE SOLOMON'S SEAL.*Vagnera* Adans.383. **S. racemosa** Desf. False Spikenard.

Common in moist woods and thickets. Mid-May-Mid-June.

384. **S. stellata** Desf.

Common in moist shaded ground. May.

385. **S. trifolia** Desf.

Sphagnous swamps. Mid-May-Mid-June.

In Cedar Swamp under tamaracks.

SMILAX L. GREENBRIER.386. **S. ecirrhata** Watson.

Woods; infrequent. June.

Woods near the Glue Factory; along Plaster Creek (F.).

387. **S. herbacea** L. Carrion-Flower.

In moist woods and thickets; not uncommon. June.

The variety *pulverulenta* Gray is included in the species.388. **S. hispida** Muhl.

Common in moist thickets. June.

Our only species of woody endogen.

S. rotundifolia L. Common Greenbrier. Horse-brier.

Woods and thickets. June.

This species is found in Blendon Township, and it probably occurs in this district.

TOFIELDIA Huds. FALSE ASPHODEL.389. **T. glutinosa** (Michx.) Pers.

Sphagnous swamps; frequent. July.

TRILLIUM L. WAKE ROBIN. BIRTHROOT.**T. cernuum** L.

Woods on the S. E. shore of Camp Lake, Secs. 7 and 18, Algoma (S.O.L.). May.

This species may be looked for in this district.

390. **T. erectum** L.

Frequent in moist woods and thickets. May.

391. **T. grandiflorum** Salisb.

Rich woods; common. May.

Exceedingly variable, and apt to sport. Forms are found with the parts of the flower in fours, or even double.

392. **T. nivale** Riddell. Dwarf White Trillium.

In moist woods; rare. April.

North bank of Plaster Creek between the M. C. Ry. and G. R. & I. Ry. (L. S. Livingston), 1882 to '86; Farm of Mr. Wilde, Sec. 20, Wright (Miss Mina Wilde). Miss Annah M. Clark reports this species as having been frequent about the City in the seventies.

UVULARIA L. BELLWORT.393. **U. grandiflora** Smith.

Rich damp woods; common. May.

ZYGADENUS Michx.394. **Z. elegans** Pursh.

Moist soil in Feakin's Marsh (B.E.L.); rare. Last of July-Aug.

AMARYLLIDACEAE. AMARYLLIS FAMILY.**HYPOXIS** L. STAR-GRASS.395. **H. erecta** L.*H. hirsuta* (L.) Coville.

Common in moist grassy places. Last of May-June.

DIOSCOREACEAE. YAM FAMILY.

DIOSCOREA L. YAM.

396. *D. villosa* L. Wild Yam-root.

Frequent in moist thickets. June.

IRIDACEAE. IRIS FAMILY.

IRIS L. WILD FLOWER-DE-LUCE.

397. *I. versicolor* L. Larger Blue Flag.

Wet places; common. June.

SISYRINCHIUM L. BLUE-EYED GRASS.

398. *S. angustifolium* Mill.

Common in meadows and grassy places. Last of May-June.

ORCHIDACEAE. ORCHID FAMILY.

APLECTRUM Nutt. PUTTY-ROOT. ADAM-AND-EVE.

399. *A. hyemale* Nutt.

A. spicatum (Walt.) B.S.P.

Rich woods; infrequent. Last of May.

Woods near West Bridge St. Ferry; along Buck Creek, near Grandville (M.&C.); East St. Pinery; Burton Ave. Swamp; Jamestown; Vergennes; Tubbs' woods, Sec. 22, Grand Rapids (O.H.).

ARETHUSA L.

400. *A. bulbosa* L.

In the sphagnum of Orchid Swamp; rare. Mid-May-Mid-June. L. S. Livingston and Prof. R. H. Wolcott report this species as having been rather abundant in this swamp in the eighties. In 1898 seven plants were found (O.H.).

CALOPOGON R. Br.*Limodorum* L.401. **C. pulchellus** R. Br.*L. tuberosum* L.

Sphagnous bogs; frequent. June-July.

Lamberton Lake region; Stafford Lake; Miller's Lake; Spruce Lake; Campau Lake; Mud Lake, Wright; Bronner Lake; Mud Lake, Plainfield; Orchid Swamp.

CORALLORHIZA R. Br. CORAL-ROOT.402. **C. innata** R. Br.*C. Corallorrhiza* (L.) Karst.

Moist rich woods; rare. July.

Farm of D. Blanding, Sec. 29, Vergennes; Sec. 18, Vergennes.

403. **C. multiflora** Nutt.

In rich moist woods; infrequent. Mid-July-Aug.

Woods along the Thornapple River; Mill Creek woods; Saddle-Bag Swamp region; East St. Pinery; Carrier Creek; Hogadone Creek; along the Walker Road, near West Leonard St. Only a few plants at any station.

CYPRIPEDIUM L. MOCCASIN-FLOWER.404. **C. acaule** Ait. Stemless Lady's Slipper.

In sphagnous swamps or dry woods; scarce. May.

Spruce Lake; Mill Creek woods; Bronner Lake; East St. Pinery; Hogadone Creek; Mud Lake, Plainfield; abundant in the Saddle-Bag Swamp region until 1895.

405. **C. candidum** Willd. Small White Lady's Slipper.

Bogs and marshes. May.

Button Lake; abundant in the marsh on the south-west side of Lamberton Lake until 1895; two plants were found in Orchid Swamp in 1885 (L.S. Livingston). One flower has been found with two slippers, one within the other (O.H.). Stems with two flowers are rare.

406. **C. parviflorum** Salisb. Smaller Yellow Lady's Slipper.
Swamps; formerly frequent, but becoming scarce. May.
Cascade Springs; along Plaster Creek at Kalamazoo Ave.; Saddle-Bag Swamp region; Burton Ave. Swamp; Mill Creek woods, and elsewhere.

407. **C. pubescens** Willd. Larger Yellow Lady's Slipper.
C. hirsutum Mill.
Woods; formerly frequent, becoming scarce. May.
Burton Ave. Swamp; Cascade Springs; Mr. Gormley's woods, Sec. 2, Walker; Mill Creek woods; Cedar Swamp; Lamberton Lake region; G. R. & I. Ry., south of South Grand Rapids; Mud Lake, Wright.

408. **C. spectabile** Salisb. Showy Lady's Slipper.
C. reginae Walt.
In swamps; formerly common, becoming scarce. June.
Burton Ave. Swamp (O.H.); along Plaster Creek at Kalamazoo Ave. (LloydFord); Cedar Swamp; Lamberton Lake region; the "big ravine" near Harris' Landing; Mud Lake, Wright; Mud Lake, Jamestown; Mill Creek woods.
This species and the two preceding, are covered with glandular hairs, and by contact sometimes produce an irritation quite similar in its effects to that of ivy poisoning.

GOODYERA R. Br. RATTLESNAKE-PLANTAIN.
Peramium Salisb.

409. **G. pubescens** R. Br.
In moist rich woods; frequent. Aug.
Mill Creek woods; Saddle-Bag Swamp region; Burton Ave. Swamp; East St. Pinery; Reed's Lake region; Vergennes.

HABENARIA Willd. REIN-ORCHIS.

410. **H. blephariglottis** Torr. White Fringed-Orchis.
Sphagnous bogs; rare. Mid-July-Aug.
Spruce Lake. This species was destroyed in the main part of the

Saddle-Bag Swamp region in 1895. A few plants still remain at Carmody Lake (Miss Agnes Kelly).

411. **H. bracteata** R. Br.

In moist or dry woods; common. May.

412. **H. ciliaris** R. Br. Yellow Fringed-Orchis.

Sphagnous swamps or meadows; rare. July-Mid-Aug.

Orchid Swamp and Button Lake, 1885 (L.S. Livingston); Diamond St. Swamp, City (O.H.); Cascade Springs (C. F. Holt); near Lamberton Creek (R.E. Matteson); Burton Ave. Swamp, 1899 (C.W. Fox); Farm of O.O. Adams, See. 19, Vergennes. This species seems to have disappeared from all the stations except the last two mentioned.

413. **H. dilatata** (Pursh) Hook.

In bogs and wet woods; rare. June.

Stafford Lake; Clear Lake.

414. **H. Hookeriana** Gray.

Rich woods with conifers intermingled; scarce. June-July.

Mill Creek Woods; Lamberton Lake; Hogadone Creek; West Bridge St. Ferry (O.H.); Vergennes.

415. **H. hyperborea** R. Br.

Bogs and wet woods; rare. June.

Mill Creek woods; Lamberton Lake (O.H.); Burton Ave. Swamp (B.E.L.); Saddle-Bag Swamp (S.O.L.).

416. **H. lacera** R. Br. Ragged Fringed-Orchis.

In sphagnous swamps; rare. July.

Miller's Lake. The station at Saddle-Bag Swamp was destroyed by fire in 1895 (S.O.L.).

417. **H. leucophaea** Gray.

Sphagnous swamps; rare. July.

In 1892 it was collected by Miss Broome in Diamond St. Swamp, City (Mrs. Hattie M. Bailey Pieters). The station at Saddle-Bag Swamp was destroyed in 1895 (O.H.).

418. **H. orbiculata** Torr.

Deep rich woods intermingled with pine. Mid-June-July.
Mill Creek woods; woods near West Bridge St. Ferry (O.H.);
East St. Pinery (Miss Mary Dickerson); woods along the Thorn-
apple River. Well distributed, but not abundant at any station.

419. **H. psycodes** Gray.

In meadows, swamps, and wet woods; formerly frequent, be-
coming occasional. July-Aug.

420. **H. tridentata** Hook.

H. clavellata (Michx.) Spreng.

On the bank of a spring brook in Burton Ave. Swamp (O.H.).
Rare. July.

421. **H. virescens** Spreng.

H. flora (L.) Gray.

In moist soil; scarce. July.

Diamond St. Swamp, City (O.H.); near Fisher Station (R.E.
Matteson); Burton Ave. Swamp (M.&C.); south branch of
Lamberton Creek, near Mud Lake, Grand Rapids (S.O.L.).

LIPARIS L. C. Richard.

Leptorchis Thouars.

422. **L. Loeselii** L. C. Richard. Twayblade.

In wet soil; rare. June.

A few plants occur along the shore of Campau Lake.

MICROSTYLLIS Nutt. ADDER'S-MOUTH.

Achroanthes Raf.

423. **M. ophioglossoides** Nutt.

A. unifolia (Michx.) Raf.

Sphagnous bogs; rare.

Two plants were found at Saddle-Bag Swamp, Aug. 12, 1893
(O.H.); this station was destroyed in 1895.

ORCHIS L.

424. *O. spectabilis* L. Showy Orchis.

Rieh woods and ravines. Mid-May—Mid-June.

Tubb's woods, Sec. 22, Grand Rapids (O.H.); Mr. Gormley's woods, Sec. 2, Walker; East St. Pinery; south branch of Lambertown Creek, south of the Knapp Road (Miss Minnie Dressler). Rare in the State.

POGONIA Juss.

425. *P. ophioglossoides* (L.) Ker.

Sphagnous bogs; infrequent. July.

Morgan Lake; Button Lake; Spruce Lake; Miller's Lake; Thompson's Lake; Mud Lake, Plainfield; Mud Lake, Wright.

White flowered forms have been found at Saddle-Bag Swamp.

426. *P. verticillata* Nutt.

This rare species was collected in a ravine in the north addition to John Ball Park, City, by Miss Lucy S. Norton, June 6, 1893. Although this region has since been searched many times even by Miss Norton herself, it has never been rediscovered. Prof. C. F. Wheeler, in speaking of the incident says: "It sometimes happens that this species disappears for two or three seasons and then reappears on the same spot." Miss Norton reported several plants at this station. The specimens collected are in the herbarium of Mrs. Hattie M. Bailey Pieters.

SPIRANTHES L. C. Richard. LADIES' TRESSES.

Gyrostachys Pers.

427. *S. cernua* L. C. Richard.

Wet meadows; frequent. Aug.—Sept.

428. *S. gracilis* Beck.

On a dry bank, west of the D. G. H. & M. Ry. Junction (R.E. Matteson), Aug., 1893. Rare.

S. Romanzoffiana Cham.

In wet ground near Pratt Lake, Lowell. Aug.—Sept.

It probably occurs in our district. A northern plant.

DICOTYLEDONES.

SAURURACEAE. LIZARD'S-TAIL FAMILY.

SAURURUS L. LIZARD'S-TAIL.

429. *S. cernuus* L.

In swamps and shallow water along streams; common. July-Aug.

JUGLANDACEAE. WALNUT FAMILY.

CARYA Nutt. HICKORY.

Hicoria Raf.430. *C. alba* Nutt. Shell-bark or Shag-bark Hickory.*H. ovata* (Mill.) Britton.

Uplands, on clayey soil; common. Mid-May-first of June.

A valuable timber tree producing the nuts of the market.

431. *C. amara* Nutt. Bitter-nut or Swamp Hickory.*H. minima* (Marsh.) Britton.

Not uncommon in moist soil. Mid-May-first of June.

432. *C. microcarpa* Nutt.Found growing with *C. alba*; frequent. Mid-May-first of June.433. *C. porcina* Nutt. Pig-nut or Broom Hickory.*H. glabra* (Mill.) Britton.

Uplands or moist woods; occasional. Mid-May-first of June.

Reed's Lake; Glue Factory woods; West Bridge St.; Plainfield Village; abundant in the northern part of Ada. The bark is closer and smoother than *C. microcarpa*, husk tardily dehiscent, nut pear-shaped or oblong, lenticels oblong.

JUGLANS L. WALNUT.

434. *J. cinerea* L. Butternut.

Low woods and uplands; frequent. Mid-May-first of June.

435. *J. nigra* L. Black Walnut.

Low woods and uplands; frequent. Mid-May-first of June.

MYRICACEAE. SWEET-GALE FAMILY.

MYRICA L. BAYBERRY. WAX-MYRTLE.

Comptonia Banks.

436. **M. asplenifolia** L. Sweet Fern.

C. peregrina (L.) Coul.

Moist sandy or gravelly soil; local. June.

Along the roads north of East St. Pinery; roadside west of Buck Lake (Miss Lora A. Smith).

SALICACEAE. WILLOW FAMILY.

POPULUS L. POPLAR. ASPEN.

437. **P. ALBA** L. White Poplar. Abele.

Escaped to roadsides; occasional. First of May.

438. **P. balsamifera** L. Balsam Poplar.

Banks of streams; occasional. First of May.

Rouge River; Thornapple River; Carlton Creek; West Bridge St. Ferry. The trunk attains a diameter of 12 inches.

P. balsamifera CANDICANS Gray. Balm of Gilead.

Occasional in cultivation. First of May.

Much of what is called balm of Gilead in cultivation, is the species.

P. DILATATA Ait. Lombardy Poplar.

A tree commonly planted for ornament. It occasionally spreads by sending up shoots from subterranean parts.

439. **P. grandidentata** Michx. Large-toothed Aspen.

Woods and borders of marshes; common. April.

440. **P. monilifera** Ait. Cotton-wood. Necklace Poplar.

P. deltoides Marsh.

Banks of streams and low ground; occasional. Mid-April–Mid-May.

Mill Creek; Rouge River; Reed's Lake, and elsewhere.

On the bank of the Thornapple River, near Cascade Springs, there is a tree which sprang up on a newly formed sand-bar in

1855, and now has a diameter of 3 feet. On an island in the same river, near the Cascade and Caledonia line, stands a tree a little over 60 years old, which was measured in 1897 by Carl Johnson, and found to have a circumference of 12 feet, 8 inches (C.F.Holt).

441. *P. tremuloides* Michx. American Aspen.

Woods and marshes; common. April.

SALIX L. WILLOW. OSIER.

442. *S. alba vitellina* Koch. White Willow.

Originally from Europe. Mid-May.

443. *S. amygdaloides* Anders.

Along streams and in marshes; frequent. Mid-May–Mid-June. There are trees about Reed's Lake which have a diameter of 18 inches. Pistillate and staminate flowers in the same catkin have been found on trees which grow in the marsh between Reed's Lake and Fisk Lake.

444. *S. candida* Fluegge. Hoary Willow.

Common in sphagnum bogs. Mid-April–Mid-May.

445. *S. candida* \times *cordata* Bebb.

Low ground; occasional. Mid-April–Mid-May.

Orchid Swamp; Plaster Creek; Mud Lake, Wright.

446. *S. cordata* Muhl. Heart-leaved Willow.

In wet soil; common. Mid-April–Mid-May.

Narrow leaved forms are common.

447. *S. discolor* Muhl. Glauconous Willow.

Common in marshes. April.

448. *S. glauophylla* Bebb.

Along streams; occasional. Mid-April–Mid-May.

East St. at Coldbrook Creek and at Silver Creek; Plaster Creek at Burton Ave.

449. *S. humilis* Marsh. Prairie Willow.

Common in dry soil. April.

450. *S. longifolia* Muhl.
S. fluvialis Nutt.
 Wet places; common. Mid-May–Mid-June.

451. *S. lucida* Muhl. Shining Willow.
 Common along streams and in swamps; variable. Mid-May.

452. *S. myrtilloides* L. Myrtle Willow.
 Sphagnous bogs; frequent. Mid-May.

453. *S. nigra* Marsh. Black Willow.
 Common along streams and low shores. Mid-May.
 The trunks of trees about Reed's Lake often attain a diameter of 18 inches.

454. *S. petiolaris* Smith. Petioled Willow.
 Common in low ground. Mid-April–Mid-May.

455. *S. PURPUREA* L. Purple Willow.
 A native of Europe. Often cultivated as a basket willow. Mid-April–Mid-May.
 In 1887 this willow was planted on the west bank of Rouge River, just below the Plainfield Village Bridge. A fire destroyed a part of the patch, and since then, it has been allowed to grow without attention. It is a shrub 5–10 feet high; twigs flexible and purple; leaves oblanceolate, serrulite, somewhat glaucous beneath; aments appearing before the leaves; scales purple (H.W.Hyser).

456. *S. rostrata* Richardson.
S. Bebbiana Sarg.
 In moist or dry soil; common. Mid-April–Mid-May.
 Pistillate and staminate flowers in the same calyx are frequent.

457. *S. sericea* Marsh. Silky Willow.
 Low ground; frequent. Mid-April.

BETULACEAE. BIRCH FAMILY.

ALNUS Gaertn. ALDER.

458. *A. incana* Willd. Speckled or Hoary Alder.
 Swamps and near streams; common. April.

BETULA L. BIRCH.

459. **B. lenta** L. Cherry Birch. Sweet or Black Birch.
In wet woods. May.
Black Ash Swamp; Burton Ave. Swamp.

460. **B. lutea** Michx. f. Yellow or Gray Birch.
In wet woods. May.
Burton Ave. Swamp; Soldiers' Home woods.

461. **B. papyrifera** Marsh. Paper or Canoe Birch. White Birch.
In rich woodlands; rare. May.
There is one tree on the Farm of J. Sheldon, Sec. 2, Walker
(Charles McCarty); on West Bridge St., near the Ferry, there is
one other.

462. **B. pumila** L. Low Birch.
Swamp and low ground; common. Mid-May–June.

CARPINUS L. HORNBEAM. IRON-WOOD.

463. **C. Caroliniana** Walt. American Hornbeam. Blue or Water Beech.
Along banks of streams; common. May.

CORYLUS L. HAZEL-NUT. FILBERT.

464. **C. Americana** Walt. Wild Hazel-nut.
Common in thickets. Last of March–April.

OSTRYA Scop. HOP-HORNBEAM. IRON-WOOD.

465. **O. Virginica** Willd. American Hop-Hornbeam. Lever-wood.
O. Virginianus (Mill.) Willd.
Rich woods and ravines; frequent. Last of April–Mid-May.

FAGACEAE. BEECH FAMILY.**FAGUS** L. BEECH.

466. **F. ferruginea** Ait. American Beech.
F. Americana Sweet.
Often forming groves with hard maple. May.

QUERCUS L. OAK.

467. *Q. alba* L. White Oak.

Uplands; common. May.

468. *Q. bicolor* Willd. Swamp White Oak.*Q. platanoides* (Lam.) Sudw.

Low ground; common. Mid-May.

A large tree.

469. *Q. coccinea* Wang. Scarlet Oak.

Sterile soil; not infrequent. Mid-May.

470. *Q. macrocarpa* Michx. Bur Oak. Over- or Mossy-eup Oak.

Rich soil; frequent. Last of May.

471. *Q. Muhlenbergii* Engelm. Yellow Oak. Chestnut-Oak.*Q. acuminata* (Michx.) Sarg.

Rich woods; occasional. Mid-May.

472. *Q. prinoides* Willd. Dwarf Chestnut-Oak.

Dry sandy soil; infrequent. Mid-May.

Hills about Lamberton Lake (O.H.); east bank of Grand River at Grand Island; abundant along the road, east of Plainfield Ave., one mile north of the Knapp Road. A shrub 2-4 feet high.

473. *Q. rubra* L. Red Oak.

Sandy soil; common. Mid-May.

A large tree.

474. *Q. velutina* Lam. (Q. tinctoria *Bartram*. Black Oak.)

Uplands; common. Last of May.

The acorns are exceedingly variable in all our species.

ULMACEAE. ELM FAMILY.

CELTIS L. NETTLE-TREE. HACKBERRY.

475. *C. occidentalis* L. Hackberry. Sugarberry.

Alluvial soil; frequent along Grand River. Mid-April.

ULMUS L. ELM.476. **U. Americana** L. White or American Elm.

Common on rich soil or low ground. April.

477. **U. fulva** Michx. Slippery or Red Elm.

Rich moist soil; frequent. April.

478. **U. racemosa** Thomas. Cork or Rock Elm.

Hill-slopes and low ground along rivers; frequent. First of May.

MORACEÆ. MULBERRY FAMILY.**CANNABIS L. HEMP.**479. **C. SATIVA** L. Hemp.

Waste ground; frequent. Summer.

A native of Europe and Asia.

HUMULUS L. HOP.480. **H. Lupulus** L. Common Hop.

Banks of streams and railroad embankments; frequent. July.

MACLURA Nutt.*Toxylon* Raf.**M. aurantiaca** Nutt. Osage Orange.*T. pomiferum* Raf.

It does not escape far from hedges, scarcely naturalized. First of June.

MORUS L. MULBERRY.481. **M. rubra** L. Red Mulberry.

Alluvial soil; occasional. June.

Along Grand River at Plainfield Village, Ada Village, West Bridge St. Ferry, Grandville; Cascade Springs; Plaster Creek. Birds eagerly seek the fruit which is ripe in July.

URTICACEÆ. NETTLE FAMILY.**BOEHMERIA Jacq. FALSE NETTLE.**482. **B. cylindrica** Willd.

Moist shaded ground; common. July-Sept.

LAPORTEA Gaud. WOOD-NETTLE.

Urticastrum Fabr.483. **L. Canadensis** Gaud.*U. diruricatum* (L.) Kuntze.

Common in low woods. July-Sept.

PILEA Lindl. RICHWEED. CLEARWEED.

Adicea Raf.484. **P. pumila** Gray. Richweed. Clearweed.

Moist woodlands. Common. July-Sept.

URTICA L. NETTLE.

485. **U. gracilis** Ait.

Common. July-Aug.

SANTALACEAE. SANDALWOOD FAMILY.

COMANDRA Nutt. BASTARD TOAD-FLAX.

486. **C. umbellata** Nutt.

Dry soil, fields, and copes; common. May-June.

"Indifferently parasitic on roots."

ARISTOLOCHIACEAE. BIRTHWORT FAMILY.

ASARUM L. ASARABACCA. WILD GINGER.

487. **A. Canadense** L.

In rich moist woods and ravines; frequent. May.

POLYGONACEAE. BUCKWHEAT FAMILY.

FAGOPYRUM Gaertn. BUCKWHEAT.

488. **F. esculentum** Moench. Buckwheat.*F. Fagopyrum* (L.) Karst.

Persists in fields after cultivation. Aug.

POLYGONELLA Michx.

489. **P. articulata** Meisn.

In dry sand; infrequent. Aug.-Sept.

Silver Lake; Bostwick Lake; Little Bostwick Lake. Abundant at these stations. It grows sparingly on the bluffs along the Upper River Road.

POLYGONUM L. KNOTWEED.

490. **P. acre** HBK. Water Smartweed.

P. punctatum Ell.

Wet places; frequent. Aug.-Sept.

491. **P. amphibium** L.

In shallow water; frequent and variable. June-Aug.

492. **P. aviculare** L. Knot-grass. Door-weed.

Common. Aug.-Oct.

493. **P. ciliinode** Michx.

Copse; frequent. July-Sept.

494. **P. Convolvulus** L. Black Bindweed.

Common in waste or cultivated ground. July-Oct.

495. **P. erectum** L.

Common. Aug.-Sept.

496. **P. Hartwrightii** Gray.

In wet soil; infrequent. Aug.-Sept.

Wood Lake; Crooked Lake; G. R. & I. Ry., south of Burton Ave.; Miller's Lake.

497. **P. Hydropiper** L. Common Smartweed or Water-Pepper.

Low ground; common. Aug.-Sept.

498. **P. hydropiperoides** Michx. Mild Water-Pepper.

Low places; common. Aug.-Sept.

499. **P. incarnatum** Ell. (*P. lapathifolium* *incarnatum* *Watson.*)

In wet soil. Aug.-Sept.

Grand River at Grand Island (O.H.); Plainfield Village; Miller's Lake.

500. **P. lapathifolium** L.

Frequent along river banks. July-Sept.

501. *P. littorale* Link.

Frequent in waste places. Aug.-Sept.

Formerly included in *P. aciculare*.

502. *P. Muhlenbergii* Watson.

P. emersum (Michx.) Britton.

Swamps; infrequent. Aug.-Sept.

Miller's Lake; Grand Island; canal between Reed's Lake and Fisk Lake; L. S. & M. S. Ry., south of Burton Ave.; along the highway between Sees. 31 and 32, Vergennes.

503. *P. ORIENTALE* L. Prince's Feather.

Escaped from gardens; occasional. Aug.-Sept.

504. *P. Pennsylvanicum* L.

Low ground; frequent. Aug.-Sept.

505. *P. PERSICARIA* L. Lady's Thumb.

Common. Aug.-Oct.

506. *P. sagittatum* L. Arrow-leaved Tear-thumb.

Wet soil; common. Aug.-Sept.

507. *P. scandens* L. Climbing False Buckwheat.

Frequent in moist thickets. July-Sept.

508. *P. tenué* Michx.

Dry sandy soil; frequent. July-Aug.

Pine Hill; Lamberton Lake region; Oak Hill Cemetery; bluffs along the upper River Road; Little Bostwick Lake, and elsewhere.

509. *P. Virginianum* L.

Moist woods and thickets; common. Aug.-Sept.

RUMEX L. DOCK. SORREL.510. *R. ACETOSELLA* L. Field or Sheep Sorrel.

Fields everywhere. May-Sept.

A native of Europe and Asia.

511. *R. altissimus* Wood. Pale Dock.

Low ground; infrequent. Mid-June-July.

Near the Glue Factory (Prof. C. F. Wheeler); banks of Grand

River, near Lower Swing Bridge (B.E.L.); West Michigan Fair Grounds (O.H.); Market Island (M.&C.); Front St., at Fulton St., City (S.O.L.); West Bridge St. Ferry (Mrs. Mary B. Fallass); near the Plaster Cave; Farm of Mrs. Martha Wells, See. 30, Vergennes; Rouge River, near the Plainfield Village Bridge. Rare in the State.

512. **R. BRITANNICA** L. Great Water-Dock.

Frequent in marshes. Aug.-Sept.

513. **R. CRISPUS** L. Curled Dock. Narrow Dock.

Fields; common. June-Sept.

514. **R. OBTUSIFOLIUS** L. Bitter Dock.

Fields and roadsides; frequent. July-Sept.

515. **R. VERTICILLATUS** L. Swamp Dock.

River banks; frequent. Mid-June-July.

CHENOPODIACEAE. GOOSEFOOT FAMILY.

ATRIPLEX L. ORACHE.

516. **A. HASTATA** L. (A. patulum hastatum Gray.)

Waste places; well established. Aug.-Sept.

CHENOPODIUM L. GOOSEFOOT. PIGWEED.

517. **C. ALBUM** L. Lamb's Quarters. Pigweed.

Waste and cultivated ground; common. July-Sept.

518. **C. ALBUM VIRIDE** (L.) Moq.

Waste places; rare. Aug.-Sept.

In a field west of John Ball Park, City (O.H.).

519. **C. BOTRYS** L. Jerusalem Oak. Feather Geranium.

Waste places. July-Oct.

Escaped from gardens, becoming frequent in the City.

520. **C. CAPITATUM** Watson. Strawberry Blite.

Blitum capitatum L.

Rich soil; infrequent. July-Sept.

Occasional along Grand River; Cedar Swamp; Saddle-Bag Swamp; Mill Creek woods.

521. *C. glaucum* L. Oak-leaved Goosefoot.
On the west bank of Grand River, near the Upper Swing Bridge (O.H.). Rare. Aug. Sept.

522. *C. hybridum* L. Maple-leaved Goosefoot.
Waste places; common. July-Sept.

523. *C. rubrum* L.
Saline places; rare. Aug.-Sept.
On the west bank of Grand River below the Lower Swing Bridge.
It does not turn red here (O.H.).

CYCLOLOMA Moq. WINGED PIGWEED.

C. platyphyllum Moq.

C. atriplicifolium (Spreng.) Coul.

Dumping ground in the City; not established. Summer.
Wealthy Ave., at Eureka St. (O.H.), 1895; Model Mills, in 1896.

SALSOLA L.

524. *S. TRAGUS* L. Russian Thistle.
Waste ground, well scattered throughout the City. Mid-June-Sept.
"This pernicious weed is now established in over forty cities and towns in Michigan."—Michigan Flora.

AMARANTACEAE. AMARANTH FAMILY.

ACNIDA L. WATER-HEMP.

525. *A. tamariscina concatenata* (Moq.) U. & B.
Moist ground. Aug.-Sept.
Grand River at Plainfield Village.

526. *A. tamariscina prostrata* U. & B.
In moist ground about Campau Lake. Aug.-Sept.

527. **A. tamariscina tuberculata** (Moq.) U.&B.(A. *tuberculata* Moq.)

Low ground; frequent. July-Sept.

AMARANTUS L. AMARANTH.528. **A. blitoides** Watson.

Fields and waste places; frequent. July-Aug.

Introduced from the West.

529. **A. graecizans** L.(A. *albus* L.)

Fields and gardens; common. July-Sept.

430. **A. hybridus** L.(A. *hypochondriacus* L.)

Sparingly escaped from gardens. Aug.-Oct.

There are a few plants near Crooked Lake (O.H.). Not observed elsewhere.

531. **A. retroflexus** L.

A common weed in gardens. July-Sept.

PHYTOLACCACEAE. POKEWEEED FAMILY.**PHYTOLACCA** L. POKEWEEED.532. **P. decandra** L. Garget. Poke. Scoke. Pigeon-Berry.

Fields and waste ground; frequent. Aug.-Sept.

NYCTAGINACEAE. FOUR-O'CLOCK FAMILY.**OXYBAPHUS** L'HER.*Allionia* Loefl.533. **O. hirsutus** Sweet.

Untilled ground. July-Aug.

Along the D. G. H. & M. Ry. embankments, west from the Junction (W.M.Clark), 1893. Still spreading. Introduced from the West.

AIZOACEAE. CARPET-WEED FAMILY.

MOLLUGO L. INDIAN-CHICKWEED.

534. *M. verticillata* L. Carpet-weed.

Dry sandy soil, fields, and roadsides; frequent. Mid-July-Sept.

PORTULACACEAE. PURSLANE FAMILY.

CLAYTONIA L. SPRING-BEAUTY.

535. *C. Virginica* L.

Moist rich woods; abundant. April.

Forms with three-cleft petals are occasional.

PORTULACA L. PURSLANE.

536. *P. OLERACEA* L. Common Purslane.

A common weed in gardens. July-Sept.

CARYOPHYLLACEAE. PINK FAMILY.

ARENARIA L. SANDWORT.

537. *A. SERPYLLIFOLIA* L. Thyme-leaved Sandwort.

Common in sterile soil. May-June.

538. *A. stricta* Michx. (A. Michauxii *Hook. f.*)

Dry soil; occasional. Mid-May-Mid-June.

Hills about Burton Ave. Swamp; Lamberton and Crooked Lake regions; Plaster Creek; central Cannon; Pine Hill; Plainfield.

A delicate and pretty species.

CERASTIUM L. MOUSE-EAR CHICKWEED.

539. *C. nutans* Raf.*C. longipedunculatum* Muhl.

In moist shaded places; rare. May-June.

Plainfield Village (H.W.Hyser).

540. *C. vulgatum* L. Mouse-ear Chickweed.

Common in moist places. Summer.

DIANTHUS L. PINK. CARNATION.541. **D. DELTOIDES L.** Maiden Pink.

Escaped from gardens. Summer.

North Fuller St., north of East Bridge St., City.

D. PROLIFER L.Escaped from a garden near the Buchanan St. School Building
(Mrs. E. P. Stephenson). Summer.**LYCHNIS L. COCKLE.**542. **L. ALBA** Mill. (L. vespertina *Sibth.*)

Cultivated or waste ground; frequent. Summer.

543. **L. CORONARIA L.** Mullein Pink.

Sparingly escaped from gardens. Summer.

It has maintained itself for more than 35 years in Sec. 32, Ver-
gennes.544. **L. GITHAGO** Scop. Corn Cockle.*Agrostemma Githago* L.

Wheat fields and roadsides; common. June.

The seeds are poisonous.

SAPONARIA L.545. **S. OFFICINALIS L.** Bouncing Bet. Soapwort.

Roadsides and waste places; common. July-Oct.

Plants with double flowers are frequent.

SCLERANTHUS L. KNAWEL.546. **S. ANNUUS L.**

Untilled ground. Summer.

Abundant in a large vacant lot at the corner of Wealthy Ave.
and South Fuller St., City.**SILENE L. CATCHFLY. CAMPION.**547. **S. antirrhina L.** Sleepy Catchfly.

Light soil; frequent. May-June.

548. **S. noctiflora** L. Night-flowering Catchfly.
In cultivated or waste places; frequent. June-Aug.

STELLARIA L. CHICKWEED. STARWORT.
Alsine L.

549. **S. longifolia** Muhl. Long-leaved Stitchwort.
Common in low ground. June-July.

550. **S. media** Cyrill. Common Chickweed.
Fields and gardens; common.

This little plant may be found in flower every month of the year.
Its stamens during the cold weather are generally reduced in number.

NYMPHAEACEAE. WATER-LILY FAMILY.

BRASENIA Schreb. WATER-SHIELD.

551. **B. peltata** Pursh.
B. purpurea (Michx.) Casp.
In lakes; frequent. Aug.

NUPHAR Sibth. & Smith. YELLOW POND-LILY. SPATTER-DOCK.
Nymphaea L.

552. **N. advena** R. Br.
In shallow muddy water of lakes; common. Summer.

NYMPHAEA L. WATER-NYMPH. WATER-LILY.
Castalia Salisb.

553. **N. odorata** Ait. Sweet-scented Water-Lily.
The rootstocks in Crooked Lake are not tuber bearing (O.H.).
Summer.

554. **N. tuberosa** Paine. Tuber-bearing Water-Lily.
In ponds and slow streams; frequent. Summer.

CERATOPHYLLACEAE. HORNWORT FAMILY.

CERATOPHYLLUM L. HORNWORT.

555. *C. demersum* L.

Aquatic; common in lakes.

It has not been found in fruit here.

MAGNOLIACEAE. MAGNOLIA FAMILY.

LIRIODENDRON L. TULIP-TREE.

556. *L. Tulipifera* L.

Moist woods; scarce. First of June.

Mill Creek woods; Reed's Lake; Berger Creek; East St. Pinery; West Bridge St. Formerly frequent but clearing and draining have made the soil drier, so that there are few young trees at present.

ANONACEAE. CUSTARD-APPLE FAMILY.

ASIMINA Adans. NORTH AMERICAN PAPAW.

557. *A. triloba* Dunal Common Papaw.

In moist or dry soil; occasional. Mid-May.

Frequent at the following stations: Grand River; Thornapple River; Plaster Creek; on the hills in Gaines and Jamestown. It has been found as far north as Ballards and this is probably its northern limits. It is a shrub 7-15 feet high, growing in clumps, and producing large, sweet, edible fruits which the frosts ripen.

RANUNCULACEAE. CROWFOOT FAMILY.

ACTAEA L. BANEERRY. COHOSH.

558. *A. alba* Mill. White Baneberry.

Rich moist woods; infrequent. May.

559. *A. spicata rubra* Ait. Red Baneberry.

Found with the preceding species; frequent. May.

ANEMONE L. ANEMONE. WIND-FLOWER.

560. *A. acutiloba* Laws. (Hepatica acutiloba DC.)
Hepatica acuta (Pursh) Britton.
 Frequent in beech and maple woods. April–Mid-May.
 Leaves with five and even seven lobes are found.

561. *A. cylindrica* Gray. Long-fruited Anemone.
 Dry sterile soil; frequent. Last of June–July.

562. *A. Canadensis* L. (A. *Pennsylvanica* L.)
 Low ground; common. June–Aug.

563. *A. Hepatica* L. (Hepatica triloba Chail. Liver-leaf.)
Hepatica Hepatica (L.) Karst.
 Frequent in oak woods. April–Mid-May.

564. *A. quinquefolia* L. Wind-flower. Wood Anemone.
 Hillsides, moist woodlands, and boggy marshes; frequent. Last of April–May.
A. nemorosa L. is the European species.

565. *A. thalictroides* L. Rue-Anemone.
Syndesmon thalictroides (L.) Hoffmg.
 In moist oak woods; infrequent. May.
 Abundant in the woods of Mrs. Maria Williams, Sec. 4, Paris; Vergennes; Alpine; Walker. A pretty spring species with white flowers often tinged with pink. It is frequently mistaken for *Isopyrum*, from which it chiefly differs in its involucral leaves, tuberous roots, and umbellate flowers.

566. *A. Virginiana* L.
 Light soil, fields, and copses; frequent. Last of June–July.
 Plants with larger flowers, petals white and obtuse are occasional.

AQUILEGIA L. COLUMBINE.

567. *A. Canadensis* L. Wild Columbine.
 Open hillsides, ravines, and edges of low ground; frequent. Mid-May–June.

CALTHA L. MARSH MARIGOLD.568. **C. palustris** L.

Wet meadows and swamps; common. Mid-April-May.

CLEMATIS L. VIRGIN'S-BOWER.569. **C. Virginiana** L. Common Virgin's-Bower.

Banks of streams, thickets, and along railroad embankments; common. July-Aug.

COPTIS Salisb. GOLDTHREAD.570. **C. trifolia** Salisb. Three-leaved Goldthread.

Low cold woods; frequent. Mid-May.

East St. Pinery; Cedar Swamp; Mud Lake, Wright; Burton Ave. Swamp; Hudsonville Swamp; Sec. 25, Jamestown; Pine Island Lake; Mill Creek woods.

HYDRASTIS Ellis. ORANGE-ROOT. YELLOW PUCCOON.571. **H. Canadensis** L. Golden Seal.

Rich moist woods; scarce. May.

Only a few plants at any station, but well distributed.

ISOPYRUM L.572. **I. binternatum** Torr. & Gray.

Abundant in beech and maple woods. Mid-April-May.

It is often mistaken for *Anemone quinquefolia* from which it differs in its tuberous thickened, fibrous roots, alternate leaves, and few seeded fruit.**NIGELLA** L.**N. DAMASCENA** L. Fennel-flower.

Spontaneous in gardens; rarely escapes. Summer.

RANUNCULUS L. CROWFOOT. BUTTERCUP.573. **R. abortivus** L. Small-flowered Crowfoot.

Moist soil; common. May-June.

574. **R. ACERIS** L. Tall Crowfoot or Buttercup.

In waste places. June.

Scattered along the railroads south of the City: C. & W. M. and L. S. & M. S. (R. E. Matteson); D. G. R. & W. Ry. at First Ave. (O.H); North Park Street Railway, near Sweet St., City. Recently introduced.

575. **R. circinatus** Sibth. Stiff Water-Crowfoot.

Batrachium divaricatum (Schrank) Wimm.

Frequent in shallow water. June–Oct.

576. **R. fascicularis** Muhl. Early Crowfoot.

In dry sandy soil. Mid-April–May.

Common east and south of the City.

577. **R. multifidus** Pursh. Yellow Water-Crowfoot.

R. delphinifolius Torr.

In ponds and slow streams; becoming infrequent. Mid-April–May. Perennial by rooting from the nodes of floating stems after flowering.

578. **R. multifidus terrestris** Gray.

Muddy banks of pools; rare.

In May, 1891, plants were collected a little south of Plaster Creek, just west of Madison Ave. (Edward Raiguel).

No herbarium specimen.

579. **R. Pennsylvanicus** L. f. Bristly Crowfoot.

Marshes and wet places along streams; frequent. July–Aug.

580. **R. recurvatus** Poir. Hooked Crowfoot.

Rich woods and ravines; frequent. May–June.

581. **R. sceleratus** L. Cursed Crowfoot.

Swamps, ditches, and low ground; common and variable. Last of May–June.

582. **R. septentrionalis** Poir.

Moist soil; frequent and variable. May–June.

The early form is almost smooth, and blooms near the first of May. About two weeks later a taller, stouter, hairier form comes into flower; growing in wetter places, with larger flowers.

THALICTRUM L. MEADOW-RUE.

583. **T. dioicum** L. Early Meadow-Rue.

Moist banks and ravines; common. Mid-April–Mid-May.

584. **T. purpurascens** L. Purplish Meadow-Rue.

Common in wet meadows. Summer.

BERBERIDACEAE. BARBERRY FAMILY.

BERBERIS L. BARBERRY.

585. **B. vulgaris** L. Common Barberry.

Occasionally found near old gardens. Last of May–Mid-June.

CAULOPHYLLUM Michx. BLUE CONOSH.

586. **C. thalictroides** Michx. Pappoose-root.

Moist rich soil, ravines, and woods; common. April–May.

JEFFERSONIA Barton. TWIN-LEAF.

587. **J. diphylla** Pers. Rheumatism-root.

Rich moist woods; rare. Mid-April.

Reed's Lake woods (O.H.). In the seventies, it grew in the woods along Plaster Creek, south of Hall St. (Miss Anna M. Clark).

PODOPHYLLUM L. MAY-APPLE. MANDRAKE.

588. **P. peltatum** L.

Common in rich soil. First of June.

MENISPERMACEAE. MOONSEED FAMILY.

MENISPERMUM L. MOONSEED.

589. **M. Canadense** L.

Moist woods and thickets; frequent. Mid-June.

LAURACEAE. LAUREL FAMILY.

LINDERA Thunb. WILD ALLSPICE. FEVER-BUSH.

Benzoin Fabric.

590. **L. Benzoin** Blume. Spice-bush. Benjamin-bush.
 A bushy shrub in low woods; frequent. Last of April.
 In Gaines this species grows on dry ridges and is the companion
 of the papaw.

SASSAFRAS Nees. SASSAFRAS.

591. **S. officinale** Nees.

S. Sassafras (L.) Karst.

Hillsides and woods in sandy soil; common. May.
 Usually a shrub or small tree, it occasionally reaches a diameter
 of 12 inches and 40 feet in height. A highly ornamental small
 tree.

PAPAVERACEAE. POPPY FAMILY.

CHELIDONIUM L. CELANDINE.

C. MAJUS L. Celandine.

Spontaneous for fifteen years or more on the premises of Dr.
 Shafer, Lyon St., City (B.E.L.). June.

PAPAVER L. POPPY.

P. RHOEAS L. Field, Red or Corn Poppy.

Persists from self-sown seeds for a few seasons in or near gar-
 dens. Summer.

SANGUINARIA L. BLOOD-ROOT.

592. **S. Canadensis** L.

Common in moist rich soil. April.

STYLOPHORUM Nutt. CELANDINE POPPY.

593. **S. diphyllum** Nutt.

Moist beech and maple woods; infrequent. Mid-May-June.
 Jamestown; Byron; Alpine; Carlisle, and elsewhere.

FUMARIACEAE. FUMITORY FAMILY.

ADLUMIA Raf. CLIMBING FUMITORY.

594. **A. cirrhosa** Raf.*A. fungosa* (Ait.) Greene.

Reported from Grand Rapids previous to 1880 (Miss Mary H. Clark). In the U. of M. Herbarium.

CORYDALIS Vent.

Capnoides Adans.595. **C. glauca** Pursh. Pale Corydalis.*C. sempervirens* (L.) Borek.

Two plants were found in Burton Ave. Swamp near the "old saw-mill" (M.&C.), June 20, 1897.

DICENTRA Bernh. DUTCHMAN'S BREECHES.

Bicuculla Adans.596. **D. Canadensis** Walp. Squirrel Corn.

Frequent in beech and maple woods. Mid-April–Mid-May.

597. **D. Cucullaria** Bernh. Dutchman's Breeches.

Frequent in moist rich woods. Mid-April–Mid-May.

CRUCIFERAE. MUSTARD FAMILY.

ALYSSUM L.

598. **A. CALYCINUM** L.*A. alyssoides* (L.) Gouan.

Waste places and along streets; well established, common in the City. May–June.

ARABIS L. ROCK CRESS.

599. **A. Canadensis** L. Sickle-pod.

In oak openings and on the edges of fields. Summer.

The plants are well distributed but grow singly.

600. **A. confinis** Watson.*A. brachycarpa* (Torr. & Gray) Britton.

Dry hillsides; well distributed, but not common. June.

601. *A. dentata* Torr. & Gray.

Moist shaded soil. May-June.

Bank of Grand River at the Soldiers' Home (Prof. C. F. Wheeler); Indian Mounds (S. E. Knappen).

602. *A. hirsuta* Scop.

Dry soil; rare. Summer.

Near Lamberton Lake (O. H.); River Road, south of Fenness Lake.

603. *A. laevigata* Poir.

Wooded hillside at the east end of Reed's Lake. Local. May-June.

604. *A. lyrata* L.

Common in oak openings. May-July.

605. *A. perfoliata* Lam. Tower Mustard.

A. glabra (L.) Bernh.

In fields. June-July.

Frequent and well distributed south of the City.

BARBAREA. R. Br. WINTER CRESS.

B. stricta Andr.

This species has appeared in the vineyard of H. C. Smith, Sec. 8, Alpine, in 1899 and 1900. May.

606. *B. vulgaris* R. Br. Yellow Rocket. Common Winter Cress.

B. Barbarea (L.) MacM.

Becoming frequent in wet places. May-June,

BRASSICA L. MUSTARD.

607. *B. ALBA* Boiss. White Mustard.

Sinapis alba L.

Waste places; occasional. Summer.

608. *B. CAMPESTRIS* L. Turnip.

Persists in fields after cultivation. Summer.

609. **B. JUNCEA** Coss.

Untilled ground; scarce. June-July.

South Division St., at the D. G. R. & W. Ry. Crossing, City (O.H.), 1896. A weed recently introduced into this country. Native of Asia.

610. **B. NIGRA** Koch. Black Mustard.

A common weed. Summer.

611. **B. SINAPISTRUM** Boiss. English Charlock.

B. arvensis (L.) B.S.P.

A coarse troublesome weed in grain fields; increasing. Summer. Lower Swing Bridge; Jefferson Ave., near Silver Creek, City; near the Soldiers' Home; Jenison.

CAMELINA Crantz. FALSE FLAX.612. **C. SATIVA** Crantz.

Fields and roadsides; becoming frequent. Mid-May-June.

CAPSELLA Medic. SHEPHERD'S PURSE.

Bursa Weber.

613. **C. BURSA-PASTORIS** Medic.

A common weed. Summer.

CARDAMINE L. BITTER CRESS.614. **C. flexuosa** (With.) Wood.

Wet woods and shallow streams; frequent. May-June.

This species and the two following take the place of *C. hirsuta* L. in the Michigan Flora of 1892.

615. **C. parviflora** L.

In wet places. May.

616. **C. Pennsylvanica** Muhl.

In wet ground; frequent. May.

617. **C. pratensis** L. Cuckoo Flower.

Moist meadows and lake borders; infrequent. May.

Reed's Lake; Fisk Lake; Orchid Swamp; Burton Ave. Swamp; Lamberton Lake region.

New plants are propagated by the dropping of the leaflets, or by the rooting of the leaflets which lie close to the ground. On the upper side of the base of the leaf, a little bud appears which forms a stem; this sends out rootlets and a new plant is formed.

618. *C. purpurea* (Torr.) Britton. Purple Cress.

Wet woods; common. Mid-April Mid-May.

619. *C. rhomboidea* DC. Spring Cress.

C. bulbosa (Schreb.) B.S.P.

Wet places; common. Mid-May.

DENTARIA L. TOOTHWORT. PEPPER-ROOT.

620. *D. diphylla* Michx. Crinkle-root.

Rich wet soil; frequent. Mid-April-Mid-May.

621. *D. laciniata* Muhl.

Moist wooded ground; common. Mid-April-Mid-May.

The typical form has whorled leaves, and leaflets sharply toothed. Growing with this are forms with alternate, rather long-petioled leaves; also forms with leaves opposite.

DIPLOTAXIS DC.

D. MURALIS DC. Sand Rocket.

Spontaneous on the premises of F. Skeels, corner of Jefferson Ave, and Burton Ave., City. (O.H.). Summer.

Seeds were taken from here and sown in the Botanical Garden of M.A.C. It spread rapidly and was soon found throughout the Garden.

DRABA L. WHITLOW-GRASS.

622. **D. Caroliniana** Walt.

Sandy fields; abundant. April.

Hillsides about Lamberton Lake; untilled ground north-east and south of the City.

ERYSIMUM L. TREACLE MUSTARD.

E. asperum DC. Western Wall-flower.

A few specimens have been collected in a meadow along South

Division St., Sec. 19, Paris (Le Grande Albee), June, 1900.
Adventive.

623. **E. cheiranthoides** L. Worm-seed Mustard.

Along streams; occasional. Summer.

Grand River at Grand Island, Ada Village; Rouge River at Plainfield Village.

LEPIDIUM L. PEPPERWORT. PEPPERGRASS.

624. **L. intermedium** Gray.

L. apetalum Willd.

Common along roads. June-Oct.

625. **L. Virginicum** L. Wild Peppergrass.

A common roadside weed. June-Oct.

NASTURTIUM R. Br. WATER-CRESS.

Roripa Scop.

626. **N. ARMORACIA** Fries. Horseradish.

Escaped from gardens; frequent in wet places. May-June.

627. **N. lacustre** Gray. Lake Cress.

R. Americana (Gray) Britton.

Found growing near the Glue Factory; scarce. Summer.

The lower leaflets drop off and take root.

628. **N. OFFICINALE** R. Br. True Water-Cress.

R. Nasturtium (L.) Rusby.

Frequent in brooks. Summer.

629. **N. palustre** DC. Marsh Cress.

Common in wet places. Summer.

630. **N. palustre hispidum** Gray.

R. hispida (Desv.) Britton.

Same location as the preceding species; frequent. Summer.

631. **N. SYLVESTRE** R. Br. Yellow Cress.

Untilled ground. Mid-June-July.

Well established in 1899 in the "tree nursery" of John Ball Park, City (Dr. Helen E. Brown). Probably recently introduced.

RAPHANUS L.

632. **R.** RAPHANISTRUM L. Wild Radish. Jointed Charlock.
In fallow and waste ground. Summer.
Frequent south and west of the City (B.E.L.); Division St. at Ridge Ave., City (O.H.).

SISYMBRIUM L. HEDGE MUSTARD.

633. **S. canescens** Nutt. Tansy Mustard.

Sophia pinnata (Walt.) Britton.
Untilled ground; local. May-June.
Along the River Road at Berger Creek; Grandville Road at the C. & W. M. Ry. Crossing (R.E. Matteson).

S. IRIO L.

There are several large clumps in a meadow along South Division St., Sec. 19, Paris, June, 1900. Introduced from Europe. It has appeared in the United States in a few places along the Atlantic coast in ballast.

634. **S. officinale** Seop. Hedge Mustard.

A common weed. June-Oct.

CAPPARIDACEAE. CAPER FAMILY.

CLEOME L.

635. **C. integrifolia** Torr & Gray.

C. serrulata Pursh.

Since 1895, it has maintained itself on dumping-ground at the corner of Sherman St. and Union St., City (M.&C.). Summer. Introduced from the West.

POLANISIA Raf.

636. **P. graveolens** Raf.

Dry gravelly bluffs of Scotch Creek (H.W. Hyser). Rare. July.

SARRACENIACEAE. PITCHER-PLANT FAMILY.**SARRACENIA** L. SIDE-SADDLE FLOWER.

637. **S. purpurea** L. Side-saddle Flower. Huntsman's Cup.

In sphagnum. June.

Abundant at Bronner Lake; Stafford Lake; Carmody Lake; Mud Lake, Plainfield; Mud Lake, Wright; Morgan Lake, and elsewhere. A curious and most interesting plant; its leaves are used to capture insects; its flowers are particularly adapted to secure cross-fertilization by insects.

DROSERACEAE. SUNDEW FAMILY.**DROSERA** L. SUNDEW.

638. **D. intermedia Americana** DC.

Sphagnous bogs; occasional. July.

Round Lake (Allen Wolcott); Miller's Lake; Frawley Lake; Carmody Lake.

639. **D. rotundifolia** L. Round-leaved Sundew.

Sphagnous bogs; frequent. July.

The plants in this genus are insectivorous.

CRASSULACEAE. ORPINE FAMILY.**PENTHORUM** L. DITCH STONE-CROP.

640. **P. sedoides** L.

In low wet places; common. Aug.-Sept.

SEDUM L. STONE-CROP. ORPINE.

641. **S. acre** L. Mossy Stone-crop.

Escaped from cultivation to roadsides near dwellings; occasional. June.

642. **S. TELEPHIUM** L. Live-for-ever. Garden Orpine.

Sparingly escaped from gardens to roadsides. Aug.-Sept.

SAXIFRAGACEAE. SAXIFRAGE FAMILY.**CHRYSOSPLENIUM L. GOLDEN SAXIFRAGE.**643. **C. Americanum** Schwein.

In cold springy places; infrequent. April-May.

Plaster Creek near the Paris Town Hall; Hudsonville Swamp; Burton Ave. Swamp.

HEUCHERA L. ALUM-ROOT.644. **H. Americana** L. Common Alum-root.

Shaded banks and hillsides; nowhere abundant, but well distributed. Mid-June-Mid-July.

MITELLA L. MITRE-WORT. BISHOP'S-CAP.645. **M. diphylla** L.

Common in rich moist woods. May.

646. **M. nuda** L.

In deep cold woods; local. May.

Burton Ave. Swamp (Bernard Nichols); Cedar Swamp; See. 25, Jamestown; Hudsonville Swamp.

PARNASSIA L. GRASS OF PARNASSUS.647. **P. Caroliniana** Michx.

In bogs and springy places; frequent. Aug.

SAXIFRAGA L. SAXIFRAGE.648. **S. Pennsylvanica** L. Swamp Saxifrage.

In swamps and on wet banks; common. May.

GROSSULARIACEAE. GOOSEBERRY FAMILY.**RIBES L. Currant. GOOSEBERRY.**649. **R. aureum** Pursh. Buffalo or Missouri Currant.

Persistent near old gardens. May.

650. **R. Cynosbati** L. Gooseberry.

In moist shaded places; common. May.

651. **R. floridum** L'Her. Wild Black Currant.

Common in low ground. May.

652. **R. oxyacanthoides** L. Swamp Gooseberry.

In wet woods; frequent. May.

653. **R. rubrum** L. Red Currant.

Cold bogs and deep swamps, associated with tamaraeks and arbor-vitae; infrequent. May.

Burton Ave. Swamp; Cedar Swamp; Sec. 25, Jamestown; Hudsonville Swamp; Secs. 30 and 31, Byron. The parent of our cultivated currant. It grows everywhere in this latitude.

HAMAMELIDACEAE. WITCH-HAZEL FAMILY.

HAMAMELIS L. WITCH-HAZEL.

654. **H. Virginiana** L.

Common on hillsides and in moist woods. Oct.

It closes the season of flowering plants. On warm dry days in October the inner coat of the seed-pod bursts with a quick, sharp report and the seeds are often thrown several feet, thus engaging in a lively fusilade.

PLATANACEAE. PLANE-TREE FAMILY.

PLATANUS L. SYCAMORE. BUTTONWOOD.

655. **P. occidentalis** L.

Frequent along streams. May.

“The largest tree of the Atlantic forests.”—Sargent.

ROSACEAE. ROSE FAMILY.

AGRIMONIA L. AGRIMONY.

656. **A. hirsuta** (Muhl.) Bicknell. (A. Eupatoria L.)

Frequent in woods and thickets. July-Aug.

657. **A. mollis** (Torr. & Gray) Britton.

Found growing with the preceding. July-Sept.

658. **A. parviflora** Soland. Small-flowered Agrimony.

In moist or dry soil; occasional. July-Sept.

FRAGARIA L. STRAWBERRY.

659. **F. Americana** (Porter) Britton.

(*F. vesca Americana* *Porter.*)

Moist woods. May.

Soldiers' Home woods; Gillon's woods, Sec. 25, Byron; near Fisher Station; Caledonia Village. Abundant northward in the State.

660. **F. Virginiana** Duchesne.

Copse and meadows; abundant. May.

The variety *Illinoensis* Gray is included in the species.

GEUM L. AVENS.

661. **G. album** Gmel.

G. Canadense Jacq.

Moist soil; common. Mid-May-July.

662. **G. rivale** L. Water or Purple Avens.

Not uncommon in wet soil. May.

663. **G. strictum** Ait.

Common in moist meadows. July-Mid-Aug.

664. **G. triflorum** Pursh.

G. ciliatum Pursh.

Sterile soil. May 15-30.

In the summer of 1900 several small patches were discovered, scattered along a "wood-road," on the east side of the S. E. $\frac{1}{4}$ of the N. W. $\frac{1}{4}$ of Sec. 15, Cascade.

Mrs. Keziah Livingston, a pioneer settler, reports this species as having been abundant in 1842 on dry gravelly soil, south of Burton Ave., between East St. and South Division St., and as having gradually disappeared after settlements began. But afterwards no trace of it was found by botanists until 1897 when Miss Jennie Livingston found a patch containing about one hun-

dred plants, on the bluffs of Plaster Creek, east of Madison Ave. This was destroyed in the autumn of 1898 when the land was cleared and cultivated. It has been reported only from two other localities in the State.

665. **G. Virginianum** L.

Common in moist soil. Summer.

NEILLIA D. Don. NINE-BARK.

Opulaster Medic.

666. **N. opulifolia** Benth. & Hook.

A shrub; common along streams. June.

Its recurved branches, clusters of white flowers, and reddish seed-pods render it ornamental.

POTENTILLA L. CINQUE-FOIL. FIVE-FINGER.667. **P. argentea** L. Silvery Cinque-foil.

A weed forming large patches to the exclusion of grass on light soil; common. Summer.

668. **P. arguta** Pursh.

Light soil. June.

A stiff plant, growing in small patches, but well distributed, flowers white.

669. **P. fruticosa** L. Shrubby Cinque-foil.

Common on swamp borders and in low meadows. Summer.

670. **P. Norvegica** L.

P. Monspeliensis L.

Common in damp soil of fields. July-Oct.

671. **P. palustris** Scop. Marsh Five-Finger.

Comarum palustre L.

In swamps and sphagnous bogs; well distributed, but nowhere abundant. July-Aug.

672. **P. simplex** Michx. (P. *Canadensis* L.)

Common in fields. May-July.

ROSA L. Rose.

673. *R. blanda* Ait.

Occasional north and east of the City. Mid-May-June.

It grows on high clay land in the Lamberton, Crooked, and Reed's Lake regions.

674. *R. Carolina* L.

Borders of swamps and low ground; common. July.

675. *R. cinnamomea* L. Cinnamon Rose.

Persists by roadsides near pioneer dwellings. May.

676. *R. humilis* Marsh.

Common on dry sandy soil. June-July.

On very dry soil the fruits and pedicels are often glandular-hispid.

677. *R. rubiginosa* L. Sweetbrier.

Roadsides and thickets; frequent. June-July.

RUBUS L. BRAMBLE.

678. *R. Canadensis* L. Dewberry. Low Blackberry.

Common and troublesome in dry sandy soil. June.

Fruit large and juicy.

679. *R. hispida* L. Running Swamp Blackberry.

Abundant on the margins of swamps. June.

680. *R. neglectus* Peck.

Intermediate between *R. occidentalis* and *R. strigosus*, and often grows with them; infrequent. June.

Abundant in woods, west of Bowen Station along the D. G. R. & W. Ry.; Farm of H. C. Smith, Sec. 8, Alpine; north of Round Lake (Prof. R. H. Wolcott); Kalamazoo Ave. at Burton Ave. (M.&C.); Soldiers' Home.

681. *R. occidentalis* L. Black Raspberry. Thimbleberry.

Common on uplands. June.

It often extends into the edges of marshes and grows with

R. strigosus. The white berried variety is spontaneous on and about Oak Hill Farm, Sec. 32, Vergennes, where the birds have scattered the seeds from the garden.

682. **R. setosus** Bigel.

In damp or marshy ground; not infrequent. June.

683. **R. strigosus** Michx. Wild Red Raspberry.

In thickets and low ground; common and variable. June.

684. **R. triflorus** Richards. Dwarf Raspberry.

R. Americanus (Pers.) Britton.

Not uncommon in moist rich woods. May.

685. **R. villosus** Ait. Common or High Blackberry.

In woods and thickets; common. Mid-June-Mid-July.

The blackberry of the markets.

SPIRAEA L. MEADOW-SWEET.

686. **S. lobata** Jacq. Queen of the Prairie.

Ulmaria rubra Hill.

Marshes; rare. July.

M. C. Ry. and G. R. & I. Ry., south of Burton Ave.; Feakin's Marsh (O.H.). A perennial herb with panicles of feathery, rose-colored flowers, often seen in cultivation.

687. **S. salicifolia** L. Common Meadow-Sweet.

A common shrubby plant in marshes. July-Aug.

688. **S. tomentosa** L. Hardhack. Steeple-Bush.

A low shrub on the edges of marshes and lakes; infrequent. July-Aug.

Abundant about Soft Water Lake; Silver Lake; Campau Lake; Laraway Lake.

WALDSTEINIA Willd.

689. **W. fragarioides** Tratt. Barren Strawberry.

Moist beech and maple woods. May.

This species came under the personal observation of the writer

in 1890 and '91, but unfortunately no specimens were preserved, and the stations were not noted with certainty.

POMACEAE. APPLE FAMILY.

AMELANCHIER Medic. JUNE-BERRY.

690. **A. Canadensis** Medic. Shad-bush. Service-berry.

Common in moist woods. May.

A shrub or small tree, the extremes of variation are:—First, leaves ovate, sharply serrate, smooth; flowers in open, drooping racemes, petals an inch long, young shoots and racemes smooth; Secondly, leaves smaller, racemes closer, petals shorter, young shoots, leaves, and racemes densely tomentose. The fruit is so eagerly devoured by birds that it is difficult to find it well ripened.

691. **A. Canadensis oblongifolia** Torr. & Gray.

A. Botryapithum (L. f.) DC.

A low shrub on light soil; infrequent.

D. G. H. & M. Ry., east of the City; along Hogadone Creek.

It blooms about two weeks later than the preceding species.

692. **A. rotundifolia** (Michx.) Roem.

There are several clumps along the highway, east of Crooked Lake. May.

CRATAEGUS L. HAWTHORN. WHITE THORN.

The members of this genus are so variable and confusing that it seems advisable to study first the most common species in their order of flowering which is quite constant in ordinary seasons as: 697 followed by 693, 696, 698, 694, 700.

693. **C. coccinea** L.

Thickets and hillsides; common. May 20–30.

Leaves when young pubescent above, smooth beneath, rarely pubescent at the veins; young shoots smooth; calyx-lobes, bracts, and pedicels sparingly glandular.

694. *C. Crus-galli* L. Cockspur Thorn.

Common in low ground. June 1-8.

695. *C. intricata* Lange.

Dry sandy soil; occasional.

Lamberton Lake region; bluffs of Plaster Creek, near the Paris Town Hall; bluffs west of the D. G. H. & M. Ry. Junction. A low shrub with slender spines, leaves smooth and reddish when young, cymes few-flowered, calyx-lobes and bracts glandular, blooms a little later than *C. coccinea*.

696. *C. macracantha* Lodd.

Frequent in moist soil. May 27-June 5.

Leaves with appressed hairs above, densely pubescent beneath, rarely confined to the veins; fruit small and of a rich glossy red. Our plant is probably *C. succulenta* of Schrader which Prof. Sargent now considers merely a variety of *C. macracantha*. Our finest thorn.

697. *C. mollis* Torr. & Gray.

Common. Mid-May.

The largest of the thorns, often 25 feet high and 12 inches in diameter.

698. *C. punctata* Jacq.

Common. June 4-12.

699. *C. rotundifolia* (Ehrh.) Borek.

A bushy shrub, leaves thick, usually incised; spines long and slender; cymes few-flowered. It is the companion of *C. intricata* and blooms at the same time.

700. *C. tomentosa* L.

A low shrub; occasional. June 10-18.

The plant is often unarmed. It retains its fruit during winter.

PYRUS L. PEAR. APPLE.

701. *P. Americana* DC. American Mountain Ash.

Sorbus Americana Marsh.

In thickets; occasional. June.

Probably spontaneous from seeds dropped by birds.

702. **P. arbutifolia** L.f. Choke-berry.

Aronia arbutifolia (L.) Ell.

Frequent on lake margins and in swamps. May.

703. **P. arbutifolia melanocarpa** Hook.

Aronia nigra (Willd.) Britton.

Growing with the preceding species. May.

P. AUCUPARIA L. European Mountain Ash.

Sorbus Aucuparia L.

Along Fourth St. Probably spontaneous from seeds scattered by birds from trees on adjacent premises. May.

704. **P. coronaria** L. American Crab-Apple.

Malus Coronaria (L.) Mill.

Tickets and wet soil; common. May.

The flowers are much admired for their color and fragrance, fruit green and bitter.

705. **P. MALUS** L. Cultivated Apple.

Malus Malus (L.) Britton.

Spontaneous in thickets along roadsides. May.

706. **P. sambucifolia** Cham. & Schleet. Elder-leaved Mountain

Sorbus sambucifolia (Cham. & Schleet.) Roem.

[Ash.]

In cold boggy marshes. June.

Spontaneous about Mud Lake and Mill Lake, Plainfield, where birds have carried the seeds from trees near these localities (S.R.Wright).

DRUPACEAE. PLUM FAMILY.

PRUNUS L. PLUM. CHERRY.

707. **P. Americana** Marsh. Wild Yellow or Red Plum.

Rich alluvial soil; common. May.

Mr. C. F. Holt tells of quite an extensive grove of these trees which grew on his father's farm in Cascade, in early days. The fruit being yellow, sweet, and large, was eagerly sought by the

settlers and the Indians, the latter coming for miles to gather it. This grove was destroyed in 1897. A few of the trees were transplanted to his orchard and still remain.

708. **P. AVIUM** L. Sweet Cherry.

Frequently escapes from cultivation to roadsides in the vicinity of farm-houses. Mid-May.

709. **P. CERASUS** L. Sour Cherry.

Roadsides, escaped from cultivation. Mid-May.

710. **P. nigra** Ait. Red Plum. Canada Plum.

Moist soil; infrequent. May.

Coldbrook Creek, near East Bridge St., City(F.); Hogadone Creek; Alaska; woods west of the D. G. H. & M. Ry. Junction.

711. **P. Pennsylvanica** L.f. Wild Red Cherry.

A small tree; frequent on sandy soil. Mid-May.

712. **P. PERSICA** Stokes. Peach.

Amygdalus Persica L.

Occasional by roadsides. First of May.

It probably will never become frequent as it does not thrive in sod.

713. **P. pumila** L. Dwarf Cherry. Sand Cherry.

Frequent in dry sandy soil. Last of May-first of June.

714. **P. serotina** Ehrh. Wild Black Cherry.

Woods; frequent. Mid-May-first of June.

715. **P. Virginiana** L. Choke-Cherry.

A shrub or small tree; very abundant on light soil. Mid-May-first of June.

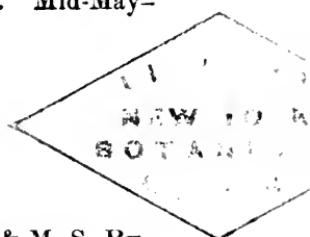
CAESALPINACEAE. SENNA FAMILY.

CASSIA L. SENNA.

716. **C. Marylandica** L. Wild Senna.

Alluvial soil; occasional. Mid-July-Sept.

Grandville; Ada Village; Plainfield Village; L. S. & M. S. Ry., near the Plaster Cave. Abundant at these stations.



CERCIS L. RED-BUD. JUDAS-TREE.717. **C. Canadensis L.**

Alluvial soil. May.

Plaster Creek; along Grand River at Ada Village, Plainfield Village, Grandville; along Pleasant Valley Creek, near West Bridge St. Ferry; abundant on the banks and islands of the Thornapple River. It fruits abundantly.

GLEBITSCHIA L. HONEY-LOCUST.718. **G. triacanthos L.** Three-thorned Acacia. Honey-Locust.
Escaped from cultivation. First of June.

There are a number of small sized trees growing along Grand River, on the Farm of E. Pettis, Sec. 21, Ada, and along Honey Creek near its mouth. The pioneer settlers say, that these trees have sprung from pods brought by high water from a tree between Ada Village and the bridge. According to Mrs. Jas. Miller this parent tree was planted when a mere twig by Mrs. Smith in her yard at Ada in 1838 or '39. This species is indigenous along the streams in the southern part of the State.

GYMNOCLADUS Lam. KENTUCKY COFFEE-TREE.719. **G. Canadensis Lam.***G. dioica* (L.) Koek.

Low woods; scarce. Mid-June.

Near Ross Station (S.); at the mouth of Honey Creek (E. Pettis); Lower Swing Bridge (Prof. R. H. Wolcott). There were three trees on the farm of N. H. Stevenson, Sec. 10, Alpine. One of these was transplanted about 17 years ago to the farm of J. Anderson near Ballards, and now has a circumference of 62 inches, and is 40 feet high (Harold Stevenson). There is a row of these trees found in front of the "old hotel" a little south of Corinth. It reaches its northern limits in the Grand River Valley.

PAPILIONACEAE. PEA FAMILY.

AMORPHA L. FALSE INDIGO.

720. **A. canescens** Nutt. Lead-Plant.Dry bluffs at Plainfield Village; scarce. Mid-June-Mid-July.
Rare in the State.

AMPHICARPA Ell. Hog PEA-NUT.

Falcata Gmel.721. **A. monoica** Ell.*F. comosa* (L.) Kuntze.

Fields and woods; common. Aug.-Sept.

Subterranean flowers are abundant when the plant grows in moist soil; in dry soil the flowers are produced on the stem.

722. **A. Pitcheri** Torr. & Gray.

In wet woods along Page Creek (Mrs. Mary E. Bennett). Aug.

APIOS Moench.

723. **A. tuberosa** Moench. Ground-nut. Wild Bean.*A. Apios* (L.) MacM.

Abundant on low ground. Aug.

The long underground shoots bear numerous, tuberous thickenings which are edible. It rarely fruits in the State.

ASTRAGALUS L. MILK-VETCH.

724. **A. Cooperi** Gray.*Phaea neglecta* Torr. & Gray.

On steep banks. June.

Rather abundant on the Lakeside Club Grounds, Reed's Lake; Rouge River at Plainfield Village, it also occurs at intervals along this River above the Village. Infrequent in the State, although well distributed.

DESMODIUM Desv. TICK-TREFOIL.

Meibomia Adans.725. **D. acuminatum** DC.*M. grandiflora* (Walt.) Kuntze.

In woodlands; common. Mid-July-Aug.

726. **D. Canadense** DC.

Frequent along streams and in moist soil. Aug.

727. **D. cuspidatum** Hook.

M. bracteosa (Michx.) Kuntze.

Moist hillsides under oak; occasional. Aug.

728. **D. Dillenii** Durl.

In oak woods; frequent. July-Aug.

Childsdale; Mill Creek woods; Plainfield Village; woods near the Fish Pond; Campan Lake, and elsewhere. Variable as to pubescence.

729. **D. Illinoense** Gray.

Dry bluffs at Plainfield Village; near Childsdale (Dr. Wm. Hyser).

Rare. July.

730. **D. Marylandicum** Boott.

Hillsides in oak woods; occasional. Aug.

Woods near the Fish Pond; Ross Station (S.); Sec 3, Plainfield.

731. **D. nudiflorum** DC.

Common in light soil. Aug.

732. **D. paniculatum** DC.

Common in oak woods. Aug.

733. **D. rigidum** DC.

In dry soil; scarce. Aug.

Bank of Grand River at Plainfield Village.

734. **D. rotundifolium** DC.

M. Michauxii Vail.

Frequent in oak openings. Aug.

735. **D. sessilifolium** Torr. & Gray.

Rather plentiful on the bluffs at Plainfield Village. Aug.

Rare in the State.

LATHYRUS L. VETCHLING. EVERLASTING PEA.736. **L. myrtifolius** Muhl.

In moist soil; infrequent. July.

Along the G. R. & I. Ry., north of Burton Ave., (R. E. Matteson);
Fisk Lake (M. & C.); Sec. 28, Vergennes.

L. LATIFOLIUS L.

Escaped from a garden and persistent for 30 years or more in unoccupied ground at the corner of Morris Ave. and Cherry St., City (F.). Summer.

737. **L. ochroleucus** Hook.

Oak woods and shaded hillsides; frequent. Mid-May–first of June.
Infrequent in the State.

738. **L. palustris** L.

Abundant in moist ground. July.

739. **L. venosus** Muhl.

Abundant on hillsides and along railroad embankments. June.
Infrequent in the State.

LESPEDEZA Michx. BUSH-CLOVER.

740. **L. capitata** Michx.

Old fields in light soil; common. Aug.

741. **L. polystachya** Michx.

L. hirta (L.) Ell.

Common in sandy woods and in old fields. Aug.

742. **L. reticulata** Watson. (L. Stuvei intermedia Watson.)

L. frutescens (L.) Britton.

Common in light soil. Aug.

743. **L. Stuvei** Nutt.

Dry sandy soil; rare. Aug.

Oak Hill Farm, Sec. 32, Vergennes (Allen S. Bennett).

744. **L. violacea** Pers.

Gravelly or clay banks; infrequent. Aug.

Bluffs at Plainfield Village; bluffs along Rouge River, Plainfield; Thornapple River; Cascade Gravel Road.

LUPINUS L. LUPINE.

745. *L. perennis* L. Wild Lupine.

Growing in masses on light soil. May.

Flowers are blue, white, purple, or pink; forms with pink flowers are found along Hogadone Creek (W.M.Clark).

MEDICAGO L. MEDICK.

746. *M. lupulina* L. Black Medick. Nonesuch.

Waste places; well distributed throughout the City. June-Sept.

747. *M. sativa* L. Lucerne. Alfalfa.

Escaped from cultivation to roadsides; becoming frequent. June-Oct.

MELILOTUS Juss. MELILOT. SWEET CLOVER.

748. *M. alba* Desv. White Melilot.

Frequent in and about the City in waste ground. June-Oct.

749. *M. officinalis* Lam. Yellow Melilot.

Becoming frequent in waste ground in the City. June-Oct.

ROBINIA L. LOCUST-TREE.

750. *R. Pseudacacia* L. Common Locust or False Acacia.

Escaped from cultivation; frequent. First of June.

751. *R. viscosa* Vent. Clammy Locust.

Escaped from gardens to roadsides; occasional. Mid-June.

Lake Ave., east of the Masonic Home (Miss Grace Fyfe); along the road one mile north of the Knapp Road, and east of Plainfield Ave. (S.O.L.); Cascade Gravel Road; central Cannon; near Alpine Station; Beal's Road.

TEPHROSIA Pers. HOARY PEA.

Cracca L.752. *T. Virginiana* Pers. Goat's Rue. Catgut.

Frequent in oak openings. Last of June-July.

TRIFOLIUM L. CLOVER. TREFOIL.

753. *T. ARVENSE* L. Rabbit-foot or Stone Clover.
East Bridge St. at Coldbrook Creek (O.H.). Rare. Summer.

754. *T. DUBIUM* Sibth. (*T. procumbens minus* Gray.)
Untilled ground; local. June.
Scattered along the C. & W. M. Ry., south of the City, from here it has spread to the immediate woods and pastures (Miss Harriet Macey).

755. *T. HYBRIDUM* L. Alsike Clover.
Escaped from cultivation; becoming frequent. May-Oct.
T. INCARNATUM L. Crimson Clover.
Recently introduced into cultivation and is in the experimental stage in this section. Scarcely self-maintaining. An annual and a native of the Mediterranean region.

756. *T. PRATENSE* L. Red Clover.
Fields and roadsides; common. Oct.

757. *T. PROCUMBENS* L. Low Hop-Clover.
Abundant on the Lakeside Club Grounds, Reed's Lake (O. H.).
Mid-June-July.

758. *T. repens* L. White Clover.
Pastures and roadsides; common. May-Oct.

VICIA L. VETCH. TARE.

759. *V. Americana* Muhl.
Abundant along railroad embankments and edges of moist ground. June.

760. *V. Caroliniana* Walt.
Common in sterile soil. May.

GERANIACEAE. GERANIUM FAMILY.

ERODIUM L'Her. STORKSBILL.

761. *E. CICUTARIUM* L'Her. Storksbill.
Fields and waste places. Summer.
Frequent in the southern part of the City; northern part of Paris.

GERANIUM L. CRANESBILL.

762. *G. Bicknellii* Britton.

In dry sandy soil of an old pinery, Sec. 20, Plainfield (H.W.Hyser). Summer.

Recently separated from the following species.

763. *G. Carolinianum* L.

Light sandy soil; scarce. Summer.

East Bridge St., City(F.); at the south-west corner of the woods along the D. G. H. & M. Ry., one mile west of the Junction.

764. *G. maculatum* L. Wild Cranesbill.

Common in moist woods. May-June.

765. *G. pusillum* L.

Waysides and waste places. Summer.

Well distributed throughout the City, and is now invading the surrounding country.

766. *G. Robertianum* L. Herb Robert.

In moist rich woods, chiefly beech and maple. June-Oct.

It is frequent in the tier of townships in the south and west border of the district; it also occurs in the woods of V. Harrington, Sec. 2, Walker.

OXALIDACEAE. WOOD-SORREL FAMILY.

OXALIS L. WOOD-SORREL.

767. *O. cymosa* Small. Tall Yellow Wood-sorrel.

In woods and fields; common. Summer.

768. *O. stricta* L. Yellow Wood-sorrel.

Waysides, fields, and gardens; common. Summer.

LINACEAE. FLAX FAMILY.

LINUM L. FLAX.

769. *L. striatum* Walt.

Abundant in moist shaded ground along the E. shore of Campau Lake. July.

This the second station known in the State.

770. **L. sulcatum** Riddell.

Plentiful on the edges of the Plainfield Village "gravel-pit." July-Aug.

This is the only station known at present for this species in the State. A specimen by Dr. Wright is in the U. of M. Herbarium.

L. USITATISSIMUM L. Common Flax.

Untilled ground. July-Aug.

Spontaneous about the West Michigan Fair Grounds; along the C. & W. M. Ry., south of City (O.H.); Court St., City; along the G. R. & I. Ry. (S.O.L.).

771. **L. Virginianum** L.

In moist shaded ground; infrequent. June-July.

Lamberton Lake region; Crooked Lake region; Vergennes; John Ball Park, City; on the bank of a creek near the school-house on the Upper River Road.

RUTACEAE. RUE FAMILY.**PTELEA** L.772. **P. trifoliata** L. Hop-tree. Shrubby Trefoil.

Common along streams. June.

XANTHOXYLUM L. PRICKLY ASH.773. **X. Americanum** Mill. Northern Prickly Ash.

Abundant along streams and in low ground. May.

SIMARUBACEAE. AILANTHUS FAMILY.**AILANTHUS** Desf.774. **A. GLANDULOSA** Desf.

Spontaneous about the City from seeds and suckers. Mid-June.

POLYGALACEAE. MILKWORT FAMILY.**POLYGALA** L. MILKWORT.775. **P. cruciata** L.

Diamond St. Swamp, City (O.H.), Aug. 12, 1894. Rare.

776. *P. paucifolia* Willd. Fringed Polygala.

Moist soil under tamaracks; local. May.

Swamps north of Burton Ave., just east of the G. R. & I. Ry., City (B.E.L.); along the south branch of Lamberton Creek (S.O.L.); Diamond St. Swamp, City (O.H.). A low plant with large rose-purple flowers.

777. *P. polycama* Walt.

Light sandy soil; infrequent. July.

John Ball Park and vicinity (O.H.); in fields south of Hall St. (M.&C.); Vergennes; woods on the hillsides along the Upper River Road. This species bears subterranean flowers which fruit abundantly.

778. *P. sanguinea* L.

P. viridescens L.

In moist soil; local. Aug.-Sept.

Silver Creek at Hall St. and at East St. (O.H.); south of Masonic Home; between Kalamazoo Ave. and Burton Ave. (M.&C.); See. 32, Vergennes; Campau Lake (Edward Campau).

779. *P. Seneca* L. Seneca Snakeroot.

Frequent in tufts on banks. Mid-May-Mid-June.

Abundant in Orchid Swamp; banks of Lamberton Creek at the Soldiers' Home; Indian Mill Creek.

EUPHORBIACEAE. SPURGE FAMILY.

ACALYPHA L. THREE-SEEDED MERCURY.

780. *A. Virginica* L.

Fields; variable and common. Aug.-Sept.

EUPHORBIA L. SPRUCE.

781. *E. commutata* Engelm.

Light soil along the banks of streams; infrequent. May-July.

Along Plaster Creek at the Paris Town Hall (Lloyd Ford); at Madison Ave. (Miss Amy Conger); along Sand Creek in Alpine and in Wright (Roy Tucker); Grand River at Plainfield Village.

782. **E. corollata** L.

Common in dry sandy soil. July-Aug.

783. **E. CYPARISSIAS** L.

Escaped from old gardens; frequent. May.

784. **E. maculata** L.

Fields and roadsides; common. July-Oct.

E. PEPLUS L.

Spontaneous about a hedge on the premises of D. Skeels, Third Ave., City (O.H.). Aug.-Nov.

Escaped from cultivation and becoming occasional in the State.

785. **E. Preslii** Guss.*E. nutans* Lag.

In fields and neglected ground; common along railroad embankments. Aug.-Oct.

ANACARDIACEAE. CASHEW FAMILY.**RHUS** L. SUMAC.786. **R. copallina** L. Dwarf Sumac.

Frequent in light soil on pine land. Last of July-Mid-Aug.

Eastern part of Alpine; about Jenison; Cascade Gravel Road; Caledonia; Cannon; Vergennes.

787. **R. glabra** L. Smooth Sumac.

Dry soil; common and variable. Mid-July.

A shrub equaling in size *R. typhina*.

788. **R. Toxicodendron** L. Poison Ivy. Poison Oak.*R. radicans* L.

Abundant in moist soil. June.

Two forms of stems are common, one climbing by rootlets even to the tops of forest trees with stems several inches in diameter; the other low and trailing.

789. **R. typhina** L. Staghorn Sumac.*R. hirta* (L.) Sudw.

Dry hillsides; frequent. First of July.

It is not uncommon that the inflorescence of this species consists of abortive flowers or even changes to leaves.

790. *R. venenata* DC. Poison Sumac or Dogwood.

R. Virax L.

Frequent in cold swamps. June.

A shrub, bark grayish, leaves bright green, fruit white in a pyramidal cluster.

ILICINEAE. HOLLY FAMILY.

Ilex L. HOLLY.

791. *I. verticillata* Gray. Black Alder. Winterberry.

Low ground. Last of June.

Abundant on the edges of swamps where it is conspicuous by its bright red berries in early winter.

Nemopanthus Raf. MOUNTAIN HOLLY.

Ilicioides Dumont.

792. *N. fascicularis* Raf.

I. mucronata (L.) Britton.

Edges of sphagnum swamps; frequent and well distributed. Mid-May.

CELASTRACEAE. STAFF-TREE FAMILY.

Celastrus L. STAFF-TREE. SHRUBBY BITTER-SWEET.

The fruit of this genus opens after frosts and discloses a crimson, pulpy, ariled seed.

793. *C. scandens* L. Wax-work. Climbing Bitter-sweet.

Banks of streams and in moist soil; frequent. Mid-June.

Euonymus L. SPINDLE-TREE.

794. *E. atropurpureus* Jacq. Wahoo. Burning-Bush.

Alluvial soil; infrequent. June.

Grand River at West Bridge St. Ferry (M.&C.); Plainfield

Village (H. W. Hyser); Boynton's Landing; woods south of Reed's Lake (Miss Grace Fyfe).

This species was formerly frequent, but it has been dug up and sold for medicinal purposes; now it is chiefly found in unfrequented places. There are four light colored lines running the length of each internode of the previous year's growth, and along the lower ones of the present year's growth of which Prof. W. W. Rowlee of Cornell University says: "These lines are the beginnings of cork wings, and are unquestionably identical in structure and function with lenticels." It is often cultivated as an ornamental shrub.

795. *E. ebovatus* Nutt. Running Strawberry Bush.

Abundant in rich moist woods. Mid-May.

STAPHYLEACEAE. BLADDER-NUT FAMILY.

STAPHYLEA L. BLADDER-NUT.

796. *S. trifolia* L. American Bladder-nut.

Frequent along streams. May.

Easily recognized in autumn by its inflated three-angled pods.

ACERACEAE. MAPLE FAMILY.

ACER L. MAPLE.

797. *A. Pennsylvanicum* L. Striped Maple.

Moist rich woods. Mid-May-Mid-June.

Burton Ave. Swamp (O.H.). No herbarium specimen.

798. *A. rubrum* L. Red or Swamp Maple.

Ravines and edges of swamps; common. April.

799. *A. saccharinum* L. (*A. dasycarpum* Ehrh. Silver Maple.)

Low woods; common. April.

It divides near its base into several trunks, becoming clump-like. Wier's Maple, so frequently seen on lawns, is a deeply cut leaf form of this species.

800. **A. Saccharum** Marsh. Rock or Sugar Maple.

Abundant in rich soil. May.

It forms large groves, or is intermingled with beech.

801. **A. Saccharum nigrum** Britton. Black Maple.

Growing with the species; frequent. May.

It differs from the species in having darker bark; large, broad, shallow-lobed leaves, pubescent beneath, the sides of which generally droop.

802. **A. spicatum** Lam. Mountain Maple.

Cold moist woods with evergreens. Mid-May-Mid-June.

Cedar swamp (Weatherwax Part); Sec. 25, Jamestown; Secs. 30 and 31, Byron. Abundant at these stations. Common in the northern part of the State, but rare as far south and inland as this locality.

NEGUNDO Moench. ASH-LEAVED MAPLE. BOX-ELDER.
Acer L.

803. **N. aceroides** Moench.

A. Negundo L.

Alluvial soil. Mid-April.

Along Plaster Creek (B.E.L.); banks of Grand River. A small tree extensively planted now as a shade tree in and about the City.

BALSAMINACEAE. JEWEL-WEED FAMILY.

IMPATIENS L. BALSAM. JEWEL-WEED.

804. **I. aurea** Muhl. (I. pallida Nutt. Pale Touch-me-not.)

In low woods and along streams, less frequent than the following species. July-Aug.

805. **I. biflora** Walt. (I. vulva Nutt. Touch-me-not.)

Marshes and banks of streams; common. July-Aug.

Corolla often pale yellow.

RHAMNACEAE. BUCKTHORN FAMILY.

CEANOOTHUS L. NEW JERSEY TEA. RED-ROOT.

* 806. *C. Americanus* L. New Jersey Tea.

Frequent in oak openings. July.

RHAMNUS L. BUCKTHORN.

807. *R. alnifolia* L'Her.

Common in marshes and in low ground. Mid-May-June.

VITACEAE. VINE FAMILY.

AMPELOPSIS Michx. VIRGINIAN CREEPER.

Parthenocissus (L.) Planch.808. *A. quinquefolia* Michx.

Woods and thickets; common. July.

It climbs by disks mostly.

809. *A. quinquefolia vitacea* Knerr.*P. quinquefolia luciniata* Planch.

Woods and thickets; common. July.

Climbs by tendrils as the grape-vine.

VITIS L. GRAPE.

810. *V. bicolor* Le Conte. Winter Grape.

Frequent on warm sandy hillsides. June.

The young shoots and tendrils are generally red.

811. *V. vulpina* L.(V. *riparia* Michx.)

Abundant along streams. June.

The young shoots and tendrils are usually green. Fruit small, glaucous, and pleasant to the taste.

TILIACEAE. LINDEN FAMILY.

TILIA L. LINDEN. BASSWOOD.

812. *T. Americana* L. Basswood. Linden.

Abundant in low rich ground. Mid-July.

MALVACEAE. MALLOW FAMILY.

ABUTILON Gaertn. INDIAN MALLOW.

813. *A. AVIENNÆ* Gaertn. Velvet-leaf.*A. Abutilon* (L.) Rusby.

Banks of streams and waste places. Aug.-Oct.

Near the mouth of Plaster Creek (R.E. Matteson); Coldbrook Creek; Grandville; Lower Swing Bridge.

ALTHAEA L.

A. ROSEA Cav. Hollyhock.

Escaped from gardens and persists along waysides in many places. July-Aug.

HIBISCUS L. ROSE-MALLOW.

814. *H. MOSCHEUTOS* L. Swamp Rose-Mallow.

Brackish marshes. Mid-Aug.

In 1885 or '86 there were hundreds of plants in the marsh about the Salt Spring (L.S. Livingston). There are only six clumps of plants remaining in 1900. It is not known to occur elsewhere within our limits. Rare in the State.

815. *H. TRIONUM* L. Bladder Ketmia.

Escaped from cultivation. Summer.

Salt Spring Marsh (B.E.L.); LaGrave St. at Burton Ave., City (O.H.). Increasing in the State.

MALVA L. MALLOW.

816. *M. MOSCHATA* L. Musk Mallow.

Waysides, escaped from gardens; occasional. Last of June-Sept.

817. *M. ROTUNDIFOLIA* L. Common Mallow.

Common in waste places. June-Oct.

HYPERICACEAE. ST. JOHN'S-WORT FAMILY.

HYPERICUM L. ST. JOHN'S-WORT.

818. *H. ASCYRON* L. Great St. John's-wort.

Rich alluvial soil. July.

Silver Creek at Jefferson Ave., City (Mrs. Hattie M. Bailey Pieters); roadside between Sees. 28 and 29, Vergennes; Sand Creek, west line of Sec. 22, Wright; marsh near Lamberton Lake, Sec. 8, Grand Rapids (S.). Stations remote and plants few.

819. *H. Canadense* L.

Wet sandy soil; infrequent. July-Oct.

Near Diamond St. Swamp, City (O.H.); Soft Water Lake; Crooked Lake; Silver Lake; Campan Lake.

820. *H. Canadense majus* Gray.

Frequent in wet soil. July-Aug.

821. *H. Kalmianum* L. Kalm's St. John's-wort.

Moist soil; occasional. July-Aug.

Plaster Creek at Burton Ave. and Madison Ave.; Carlton Creek; Belmont; Wood Lake; Silver Lake; Lamberton Lake region; Crooked Lake region.

822. *H. maculatum* Walt.

Banks and woods; common. July-Aug.

823. *H. mutilum* L.

Moist soil; common. July-Sept.

824. *H. perforatum* L. Common St. John's-wort.

Pastures and roadsides. July-Aug.

A weed becoming too common; the acrid juice is troublesome to grazing animals.

825. *H. prolificum* L. Shabby St. John's-wort.

A low shrubby plant; common in moist ground. July-Sept.

826. *H. Virginicum* L. (*Elodes campanulata* *Pursh.* *Marsh St. Triadenum Virginicum* (L.) Raf. John's-wort.)

Common in wet soil. Mid-July-Aug.

CISTACEAE. ROCK-ROSE FAMILY.

HELIANTHEMUM Pers. ROCK-ROSE.

827. *H. Canadense* Michx. Frost-weed.

Gravelly or sandy soil; frequent. Mid-June-July.

LECHEA L. PINWEED.

828. *L. major* Michx.*L. villosa* Ell.

Common in light soil. July-Sept.

In autumn a rosette of new root-leaves appears which persists through the winter.

VIOLACEAE. VIOLET FAMILY.

SOLEA Spreng. GREEN VIOLET.

Cabelium Raf.829. *S. concolor* Ging.

Rich damp woods; scarce. Last of May.

Reed's Lake (Eugene Palmer); woods of Mr. Lowes, See. 16, Grand Rapids (Miss Elsie Lowes); Soldiers' Home woods.

It fruits sparingly here. Closed flowers are occasionally produced at the summit of the stem in late summer and autumn.

VIOLA L. VIOLET. HEART'S-EASE.

830. *V. blanda* Willd. Sweet White Violet.

Bogs and low ground; common and variable. Last of April-May.

831. *V. blanda palustriformis* Gray.*V. blanda amoena* (Le Conte) B.S.P.

Burton Ave. Swamp. May.

832. *V. Canadensis* L. Canada Violet.

Abundant in beech and maple woods. Mid-May-Oct.

833. *V. canina Muhlenbergii* Gray.*V. Labradorica* Schrank.

Common in moist soil. Mid-April-May.

834. *V. lanceolata* L. Lance-leaved Violet.

Moist soil; local. Mid-May-Mid-June.

Abundant on the shore of Soft Water Lake (Prof. R. H. Wolcott); Lamberton Lake (S.O.L.); Burton Ave. Swamp (R. E. Matteson); roadside and ditches north of East St. Pinery.

835. **V. ovata** Nutt. Ovate-leaved Violet.

Some fine specimens of this species grow in a sterile spot in the East St. Pinery (Prof. C. F. Wheeler). It blossoms a little earlier than *V. sagittata*.

836. **V. palmata** L. Common Blue Violet.

Frequent on dry shaded hillsides. May.

Bluffs of Plaster Creek; hillsides about Burton Ave. Swamp. In dry soil the later leaves are variously lobed at the base, in wet soil they do not have this characteristic.

837. **V. palmata cucullata** Gray.

Common and variable. May.

The color of the corolla is purple, blue, white, or variegated as that of the preceding species.

838. **V. pedata** L. Bird-foot Violet.

Sandy fields and hillsides; common. May.

Forms with white corollas are rare. The plant frequently blooms a second time in autumn.

839. **V. pedata bicolor** Pursh.

Grows with the preceding species; infrequent. May.

The two upper petals are of a deep velvety violet. Variations in coloring between this and the preceding are occasional.

840. **V. pubescens** Ait. Downy Yellow Violet.

Common in moist rich soil. May.

841. **V. rostrata** Pursh. Long-spurred Violet.

In moist shaded soil. May.

Well distributed and rather frequent.

842. **V. sagittata** Ait. Arrow-leaved Violet.

In moist soil; occasional. May.

Silver Creek at East St.; East St. Pinery; Morgan Lake; west of Reed's Lake. The fruit is generally produced on long pedicels from closed flowers which appear in mid-summer.

843. **V. scabriuscula** (Torr. & Gray) Schwein.

Prefers beech and maple woods. May.

844. *V. striata* Ait. Pale Violet.

Frequent in rich moist woods. Mid-May-Mid-June.

This species often flowers a second time in autumn. Closed flowers are produced at the summit of the stem.

V. tricolor L. Pansy. Heart's-ease.

Straying more or less from gardens and becoming depauperate and small flowered. Summer.

THYMELEACEAE. MEZEREUM FAMILY.

DIRCA L. LEATHERWOOD. MOOSEWOOD.

845. *D. palustris* L.

Low rich woods. Mid-April-First of May.

Frequent in Georgetown; Saddle-Bag Swamp region; Soldiers' Home woods.

LYTHRACEAE. LOOSESTRIFE FAMILY.

DECODON J.F.Gmel. SWAMP LOOSESTRIFE.

846. *D. verticillatus* Ell.

Common around lakes with submerged or marshy margins. Aug.

GNAGRACEAE. EVENING-PRIMROSE FAMILY.

CIRCAEA L. ENCHANTER'S NIGHTSHADE.

847. *C. alpina* L.

Cold woods growing on or near decaying logs; frequent. July-Aug.

848. *C. Lutetiana* L.

Common in rich moist woods. July-Aug.

EPILOBIUM L. WILLOW-HERB.

849. *E. adenocaulon* Haussk.

Common in wet soil. July-Aug.

850. **E. angustifolium** L. Great Willow-herb. Fire-weed.

Chamaenerion angustifolium (L.) Scop.

Common on newly cleared swamp-lands. July-Aug.

851. **E. lineare** Muhl.

Bogs and sphagnum marshes; infrequent. Aug.-Sept.

Pine Island Lake; Cedar Swamp; Plaster Creek, west of South Division St.; Saddle-Bag Swamp region. Chiefly a northern plant.

852. **E. palustre** L.

Moist soil; infrequent. Aug.-Sept.

Cedar Swamp; Pine Island Lake.

853. **E. strictum** Muhl.

Bogs and sphagnum marshes; infrequent. Aug.-Sept.

Cedar Swamp; Orchid Swamp (B.E.L.); Fisk Lake.

GAURA L.

854. **G. biennis** L.

Along Plaster Creek in an old field, east of South Division St. (O.H.). Aug.-Oct.

Rare in the State.

LUDWIGIA L. FALSE LOOSESTRIFE.

855. **L. palustris** Ell. Water Purslane.

Isnardia palustris L.

Common in low ground, often growing in shallow water. July-Aug.

OENOTHERA L. EVENING PRIMROSE.

856. **OE. biennis** L. Common Evening Primrose.

Onagra biennis (L.) Scop.

Fields and untilled ground; common. July-Sept.

The flowers open suddenly.

857. **OE. fruticosa** L. Sundrops.

Kneiffia fruticosa (L.) Raimann.

Dry, gravelly or sandy banks; occasional. July.

Roadsides about East St. Pinery; Vergennes; Silver Creek at East St.; Lamberton Lake region; D. G. H. & M. Ry., east of the City.

858. **OE. pumila** L.

Kneiffia pumila (L.) Spach.

Dry soil in Burton Ave. Swampy; rare. July.

HALORAGEAE. WATER-MILFOIL FAMILY.

MYRIOPHYLLUM L. WATER-MILFOIL.

859. **M. heterophyllum** Michx.

It grows sparingly in still, shallow places in the Thornapple River. July-Aug.

Rare in the State.

860. **M. spicatum** L.

In shallow water. July-Aug.

Abundant in Reed's Lake.

861. **M. tenellum** Bigel.

It grows abundantly in sand, in shallow water on the margin of Little Bostwick Lake. Aug.-Sept.

This is the first mention of its occurrence in the State.

862. **M. verticillatum** L.

In shallow water. July-Aug.

Abundant in the creek connecting Larkins' Lake and Tobey Lake.

PROSERPINACA L. MERMAID-WEED.

863. **P. palustris** L.

Marshes and ditches. Aug.-Sept.

Common about Reed's Lake and Fisk Lake; Silver Lake, and elsewhere.

ARALIACEAE. GINSENG FAMILY.

ARALIA L. GINSENG. WILD SARSAPARILLA.

864. **A. hispida** Vent. Bristly Sarsaparilla. Wild Elder.

In sphagnum swamps; scarce. Mid-June-Mid-July.

Along East Bridge St., near Twin Lakes; south-west side of the swamp about Spruce Lake.

865. *A. nudicaulis* L. Wild Sarsaparilla.

Banks and ravines in shaded places; common. May.

866. *A. quinquefolia* Decsne. & Planch. Ginseng.

Panax quinquefolium L.

Rich moist woods. Last of June.

Formerly common and well distributed. It has been nearly exterminated by digging the roots for profit.

867. *A. racemosa* L. Spikenard.

Ravines and rich woods; frequent. Aug.

868. *A. trifolia* Decsne. & Planch. Ground-nut. Dwarf Ginseng.

Panax trifolium L.

Frequent in thickets and rich woods. May.

UMBELLIFERAE. PARSLEY FAMILY.

ANGELICA L.

869. *A. atropurpurea* L.

A tall, coarse plant in marshes and along streams. Mid-June-July.

BERULA Hoffm.

B. angustifolia Koch.

B. erecta (Huds.) Coville.

Cold springy places. Aug.

This species has been found at Fallassburg and may be looked for in this district. Infrequent in the State.

CARUM L. CARAWAY.

870. *C. CARUM* L. Caraway.

Escaped from cultivation to roadsides; occasional. July.

CHAEROPHYLLUM L.

871. *C. procumbens* Crantz.

In moist shaded ground; occasional. May.

Along Plaster Creek; banks of Grand River at the following stations: Ada Village (Miss Birdie Bennett); Indian Mounds (O.H.); Annahdale Farm, Sec. 5, Wyoming (Parke McMullen).

CICUTA L. WATER HEMLOCK.

872. **C. bulbifera L.**

Common in swamps and shallow ditches. Aug.-Sept.

The bulblets are produced to the exclusion of the flowers.

873. **C. maculata L.** Spotted Cowbane. Beaver-Poison.

Swamps and low ground; common. July-Sept.

The root is very poisonous.

CONIOSELINUM. Hoffm.

874. **C. Canadense** Torr. & Gray. Hemlock-Parsley.

C. Chinense (L.) B.S.P.

In cold marshes and swamps; infrequent. Sept.

Mill Creek; Plaster Creek; Indian Mill Creek; Grand River; Burton Ave. Swamp.

CONIUM L. POISON HEMLOCK.

875. **C. MACULATUM** L.

Roadsides; infrequent. July-Aug.

Near the Plainfield Village Ferry; Upper Ada Road, west of the Village; near the mouth of Honey Creek, and scattered along the highway toward the Ada Ferry. Fruit extremely poisonous.

CRYPTOTAENIA DC. HONEYWORT.

Doringa Adams.

876. **C. Canadensis** DC.

Common in low ground. June-July.

DAUCUS L. CARROT.

877. **D. CAROTA** L.

In fields and waste places; becoming frequent. July-Aug.

Rockford; south of the City; Kinney Station; Plainfield Village; Fountain St. Cemetery, City; Vergennes; Englishville.

ERIGENIA Nutt. HARBINGER-OF-SPRING.

878. *E. bulbosa* Nutt.

In low woods; common. Last of March–April.

Our earliest spring flower, it appears even before the snow has left the shady nooks.

FOENICULUM Adans. Fennel.

879. *F. vulgare* Gaertn. (F. officinale All.)*F. Foeniculum* (L.) Karst.

Escaped from gardens; rare. July–Sept.

Grandville (O.H.).

HERACLEUM L. Cow-PARSNIP.

880. *H. lanatum* Michx.

Low ground; frequent. June.

A stout plant with large leaves. It is well distributed, but nowhere very abundant.

HYDROCOTYLE L. WATER PENNYWORT.

881. *H. Americana* L.

Boggy ground, ditches, and creek margins; common. July–Aug.

882. *H. umbellata* L.

Sandy shores of lakes; local. Aug.

N. E. shore of Fisk Lake (R.E.Matteson); “picnic grounds” at Pine Island Lake; Heffron Lake.

OSMORRHIZA Raf. SWEET CICELY.

Washingtonia Raf.883. *O. brevistylis* DC.*W. Claytoni* (Michx.) Britton.

Common in rich moist woods. May–June.

884. *O. longistylis* DC.

Grows with the preceding. May–June.

PASTINACA L. PARSNIP.885. **P. SATIVA** L.

Waste places and dumping-ground. July-Aug.

Rockford; Plainfield Village; Reed's Lake; Hogadone Creek; roadsides in Jamestown and Walker.

PIMPINELLA L.886. **P. integerrima** (L.) Gray.

In dry soil, hillsides, and thickets; abundant. June-July.

SANICULA L. SANICLE. BLACK SNAKEROOT.887. **S. Canadensis** L.

In beech and maple woods; scattered, but frequent. June-July.

888. **S. gregaria** Bicknell.

In moist woods and thickets; occasional. June-July.

889. **S. Marylandica** L.

Common in moist, oak woods. June-July.

SIUM L. WATER PARSNIP.890. **S. cicutaefolium** Gmel.

Common in low ground. Aug. Sept.

TIEDEMANNIA DC.

Orypolis Raf.

891. **T. rigida** Coult. & Rose. Cowbane.

Marshes and creek margins; frequent. Aug.

Fish Pond; Plaster Creek; Button Lake; Scotch Creek; Campau Lake; Clear Lake; Page Creek, and elsewhere. This species is not found much north of latitude 43°.

ZIZIA Koch.892. **Z. aurea** Koch.

Low ground; common. June-July.

Confused with *Thaspium aureum* Nutt. which is not known to grow in the State.

893. **Z. cordata** DC.

Dry shaded bluffs along the Thornapple River at Pine Hill and near the mouth of Hulbert Creek. June-July.

Rare in the State.

CORNACEAE. Dogwood Family.**CORNUS** L. CORNEL. DOGWOOD.894. **C. alternifolia** L. f.

Moist banks and ravines; frequent. June.

895. **C. Canadensis** L. Dwarf Cornel. Bunch-Berry.

Borders of sphagnum swamps and cold woods. June.
East St. Pinery; Orchid Swamp; Mud Lake, Wright; in pine woods about three miles north-west of North Park (Prof. R.H. Woleott). Common in the northern part of the State, rare in the southern part.

896. **C. candidissima** Marsh. (*C. paniculata* L'Her.)

Hillsides and copse; common. Mid-June.

897. **C. circinata** L'Her. Round-leaved Dogwood.

On the south-west side of Pine Hill; rare. Mid-June.

898. **C. florida** L. Flowering Dogwood.

A small tree in oak woods; frequent. Mid-May.

The involucre is formed from the enlarged flower bud-scales.

899. **C. sericea** L. Silky Cornel. Kinnikinnik.

C. Amomum Mill.

Low ground and along streams; common. First of June.

The inner bark was used by the Indians for smoking.

900. **C. stolonifera** Michx.

Common in low ground. Mid-May-first of June.

Locally called "red willow."

NYSSA L. Tupelo. PEPPERIDGE. SOUR GUM TREE.

901. **N. sylvatica** Marsh. Pepperidge. Tupelo.

Swamp borders; frequent. June.

A medium sized tree, only a few trees at any one station, but well distributed.

PYROLACEAE. WINTERGREEN FAMILY.

CHIMAPHILA Pursh. PIPSISSEWA.

902. **C. maculata** Pursh. Spotted Wintergreen.

In oak woods; rare. July.

Farm of G. W. Collar Sec. 15, Ada; Mill Creek woods (O.H.), (R.E. Matteson).

903. **C. umbellata** Nutt. Pipsissewa. Prince's Pine.

Frequent in woods with occasional pine. July.

PYROLA L. SHIN-LEAF. WINTERGREEN.

904. **P. elliptica** Nutt. Shin-leaf.

Common in rich woods. July.

905. **P. rotundifolia** L.

Dry, oak woods with occasional pine; frequent. July.

906. **P. rotundifolia uliginosa** Gray.

In sphagnous bogs under tamaracks; rare. July.

Mud Lake, Plainfield; Mud Lake, Wright.

907. **P. secunda** L.

In woods and thickets; common. June–Mid-July.

MONOTROPACEAE. INDIAN-PIPE FAMILY.

MONOTROPA L. INDIAN PIPE.

908. **M. Hypopitys** L. Pine-sap. False Beech-drops.

Hypopitys Hypopitys (L.) Small.

In dry, oak woods with pine; rare. July–Aug.

Mill Creek woods in 1892 (O.H.), in 1896 (S.O.L.); west line of Sec. 32, Vergennes; in East St. Pinery the flowers are cream-colored (Le Grande Albee).

909. **M. uniflora** L. Indian Pipe. Corpse-Plant.

Damp woods; frequent. July.

ERICACEAE. HEATH FAMILY.

ANDROMEDA L.

910. *A. polifolia* L.

Sphagnous bogs; frequent. May.

ARCTOSTAPHYLOS Adans. BEARBERRY.

911. *A. Uva-ursi* Spreng. Bearberry.

In dry sandy soil; occasional. May.

Oak Hill Cemetery, City; hills about Burton Ave. Swamp(O.H.); abundant on the E. shore of Silver Lake (H. W. Hyser); Sec. 33, Cannon; Upper River Road, near the school-house.

CASSANDRA Don. LEATHER-LEAF.

Chamaedaphne Moench.

912. *C. calyculata* Don.

In marshes and swamps; common. Mid-April–Mid-May.

Small swamps are frequently wholly overgrown by it.

EPIGAEA L. TRAILING ARBUTUS. GROUND LAUREL.

913. *E. repens* L.

Abundant in low woods intermingled with pine. April.

Lobes of corolla varying from three to eight (S.O.L.). It seldom fruits in this locality.

GAULTHERIA Kalm. AROMATIC WINTERGREEN.

914. *G. procumbens* L. Creeping Wintergreen.

Low woods and borders of swamps; common. July.

LEDUM L. LABRADOR TEA.

915. *L. Groenlandicum* OEder. (L. latifolium Ait.)

Sphagnous swamps; rare. First of June.

Burton Ave. Swamp (L. S. Livingston), 1885 to '86; Saddle-Bag Swamp (O.H.), 1893. No herbarium specimens have been preserved.

VACCINIACEAE. HUCKLEBERRY FAMILY.

CHIogenes Salisb. CREEPING SNOWBERRY.

916. *C. serpyllifolia* Salisb. Creeping Snowberry.

C. hispida (L.) Torr. & Gray.

Sphagnous swamps; rare. May.

Found creeping over decayed logs in Cedar Swamp, near the Blendon Road.

GAYLUSSACIA HBK. HUCKLEBERRY.

917. **G. resinosa** Torr. & Gray. Black Huckleberry. Crackleberry.

Abundant in light soil, also found in swamps. Mid-May-Mid-June.

VACCINIUM L. BLUEBERRY. BILBERRY. CRANBERRY.

918. **V. Canadense** Richards.

Edges of sphagnous swamps; occasional. June.

Carmody Lake; Bronner Lake; Spruce Lake. A low shrub, berries blue, with a bloom. One of the market berries of the northern lake regions.

919. **V. corymbosum** L. Swamp-Blueberry.

Sphagnous swamps; common and variable. Mid-May-first of June.

The berry of our home markets. The variety *amoenum* Gray is a hairier form scarcely to be separated.

920. **V. corymbosum atrococcum** Gray. Black Blueberry.

Sphagnous swamps. Mid-May-first of June.

Rather abundant about Carmody Lake, found growing with *V. corymbosum*.

921. **V. macrocarpon** Ait. Large or American Cranberry.

Oxycoccus macrocarpus (Ait.) Pers.

In sphagnous bogs; frequent. June-July.

The cranberry of the markets.

922. **V. Oxycoccus** L. Small Cranberry.

Oxycoccus Oxycoccus (L.) MacM.

Sphagnous bogs; infrequent. Mid-June-Mid-July.

923. **V. Pennsylvanicum** Lam. Dwarf Blueberry.

Dry woods or hillsides; common. May.

The lowest of the blueberries, and ripens its fruit about a month before the other species in this locality.

924. *V. vacillans* Soland. Low Blueberry.

Dry woods and copses; infrequent. May.

Edges of the Big Marsh; Pine Island Lake; near Belmont.

PRIMULACEAE. PRIMROSE FAMILY.

LYSIMACHIA L. LOOSESTRIFE.

925. *L. NUMMULARIA* L. Moneywort.

In moist places; becoming frequent. July-Aug.

Reed's Lake (S.); Fisk Lake; west bank of Grand River, near the Plaster Cave (O.H.); south of the Indian Mounds (M.&C.); field south of the Standard Oil Works, Butterworth Ave., City (Mrs. Mary B. Fallass); ditches along the highway between Sees. 7, Walker and 12, Tallmadge (Roy Tucker).

926. *L. quadrifolia* L.

Thickets and hillsides in oak woods; infrequent. Mid-June-July.

John Ball Park, City; Sec. 32, Vergennes.

927. *L. stricta* Ait.

L. terrestris (L.) B.S.P.

Edges of marshes; frequent. July.

Plants with bulbils in the axils instead of flowers are occasional.

928. *L. thyrsiflora* L. Tufted Loosestrife.

Naumburgia thyrsiflora (L.) Duby.

Swamps; frequent. Mid-June-July.

SAMOLUS L. WATER PIMPERNEL. BROOK-WEED.

929. *S. Valerandi Americanus* Gray.

S. floribundus HBK.

In springy places. Mid-June-Mid-July.

In the marsh about the Salt Spring; Fisher Station; the Outlet; Plaster Creek. Abundant at these stations.

STEIRONEMA Raf.

930. *S. ciliatum* Raf.

Frequent in moist thickets. July-Aug.

931. **S. lanceolatum** Gray.

Edges of marshes and in wet places; frequent. July-Aug.

932. **S. longifolium** Gray.

S. quadriflorum (Sims) Hitch.

In bogs and springy places; common. July.

TRIENTALIS L. CHICKWEED WINTERGREEN.933. **T. Americana** Pursh. Star-flower.

Frequent in deep moist woods. May.

OLEACEAE. OLIVE FAMILY.**FRAXINUS** L. ASH.934. **F. Americana** L. White Ash.

Common in rich upland woods. Mid-May.

935. **F. Pennsylvanica** Marsh. (*F. pubescens* Lam. Red Ash.)

Low woods; well distributed, but not abundant. Mid-May.

936. **F. quadrangulata** Michx. Blue Ash.

Reported as occasional along the bluffs of Grand River by several lumbermen who were interested in timber in "early times." No herbarium specimen.

937. **F. sambucifolia** Lam. Black Ash.

F. nigra Marsh.

Swamps; common. Mid-May.

938. **F. viridis** Michx. f. Green Ash.

F. lanceolata Borek.

A small tree on alluvial soil; occasional. Mid-May.

Reed's Lake; along Grand River and its tributaries.

SYRINGA L.939. **S. VULGARIS** L. Lilac.

Persistent about pioneer dwellings and waysides. May.

GENTIANACEAE. GENTIAN FAMILY.**BARTONIA** Muhl.940. **B. tenella** Willd.

B. Virginica (L.) B.S.P.

In sphagnum; rare. Aug.

Mill Creek woods (O.H.), 1897; Carmody Lake (Miss Alice Kelly), 1900.

FRASERA Walt. **AMERICAN COLUMBO.**

941. *F. Carolinensis* Walt.

Frequent in oak openings; well distributed. Last of June-July. Scarce in the State.

GENTIANA L. **GENTIAN.**

942. *G. alba* Muhl.

Moist shaded hillsides in John Ball Park, City; rare. Sept.

943. *G. Andrewsii* Griseb. Closed Gentian.

Moist soil; frequent. Sept.

Forms with white corollas are found at the City Settling Basin (S.O.L.).

944. *G. crinita* Froel. Fringed Gentian.

Wet ground; less frequent than *G. serrata*. Sept.

945. *G. quinqueflora occidentalis* Gray.

Wet soil; rare. Sept.

In and about John Ball Park, City.

946. *G. serrata* Gunner. Smaller Fringed Gentian.

G. detonsa Rottb.

In springy or marshy ground; frequent. Sept.

MENYANTHES L. **BUCKBEAN.**

947. *M. trifoliata* L.

Sphagnous bogs; frequent. May.

APOCYNACEAE. **DOGBANE FAMILY.**

APOCYNUM L. **DOGBANE. INDIAN HEMP.**

948. *A. androsaemifolium* L. Spreading Dogbane.

Fields and thickets; common. June-July.

949. *A. cannabinum* L. Indian Hemp.

In wet soil; common and variable. July-Aug.

950. **A. hypericifolium** Ait.

Especially frequent on sandy lake borders. July-Aug.

Silver Lake (H. W. Hyser); Little Bostwick Lake; Crooked Lake; Campau Lake; West Omens Lake.

VINCA L.

951. **V. minor** L. Periwinkle. Myrtle.

Escaped in the vicinity of cemeteries and dwellings, spreading by roots. May.

ASCLEPIADACEAE. MILKWEED FAMILY.

ACERATES Ell. GREEN MILKWEED.

952. **A. viridiflora** Ell.

In dry sandy soil; frequent. July.

Broad leaved forms and narrow leaved forms grow together; the latter have been mistaken for *A. longifolia*, which has only been found on the shores of the Great Lakes.

ASCLEPIAS L. MILKWEED. SILKWEED.

953. **A. incarnata** L. Swamp Milkweed.

Common in low ground. July-Aug.

954. **A. obtusifolia** Michx.

In dry sandy soil. June-July.

Only a few plants at any station, but well distributed. Scarce in the State.

955. **A. phytolaccoides** Pursh. Poke Milkweed.

A. evoluta (L.) Muhl.

In moist woods. June.

Plants scattered, but well distributed.

956. **A. purpurascens** L. Purple Milkweed.

Light soil of woods and thickets; infrequent. Mid-June-July. Roadside Sec. 31, Vergennes; along Burton Ave.; Mill Creek woods; bluffs of Hogadone Creek; Soldier's Home woods (O.H.); Quimby's Lumber Yard, City (S.O.L.); Market Island, City (M. & C.).

957. **A. Syriaca** L. (*A. Cormuti Decaisne*. Common Milkweed.)

Fields and waste places; everywhere. Last of June-Aug.

958. **A. tuberosa** L. Butterfly-weed. Pleurisy-root.

Light soil; common. July-Aug.

Corollas vary from red to pale yellow.

959. **A. verticillata** L.

In dry fields and oak openings; occasional. Last of June-July. Corner of Burton Ave. and Kalamazoo Ave.; south of the cemeteries, Hall St., City; woods on Peach Ave.; near Button Lake and Lamberton Lake regions; field at the corner of Wealthy Ave. and Fuller St., City.

CONVOLVULACEAE. CONVOLVULUS FAMILY.

CONVOLVULUS L. BINDWEED.

960. **C. arvensis** L. Bindweed.

Waysides and untilled fields; spreading. Summer.

A troublesome weed and very difficult to exterminate.

961. **C. sepium** L. Hedge Bindweed.

Moist alluvial soil; common. Summer.

Forming tangles over shrubs in thickets.

962. **C. sepium Americanus** Sims.

Found growing with the preceding; common. Summer.

963. **C. spithameus** L.

Barren soil. Summer.

Well distributed and plentiful. Local in the State.

IPOMOEA L. MORNING-GLORY.

964. **I. pandurata** Meyer. Wild Potato-vine. Man-of-the-Earth.

On the bank of Grand River at Wallen's Tannery, City. Aug., 1895 (O.H.). Rare.

* **I. purpurea** Roth. Morning-glory.

In springs up on dumping-ground and maintains itself by self-sown seeds for a few years. Summer.

CUSCUTACEAE. DODDER FAMILY.

CUSCUTA L. DODDER.

965. *C. Gronovii* Willd.

On the edges of marshes; common. Aug.

It forms masses of tangled, orange, thready vines. Parasitic. Its seed is said to germinate fully a month later than other seeds, so that the plants about it may have a good start, before it begins preying upon them.

POLEMONIACEAE. PHLOX FAMILY.

PHLOX L.

966. *P. divaricata* L.

Rich woods and copses; common. May-Mid-June.

Occasionally with white corollas.

967. *P. pilosa* L.

Frequent on dry sandy soil of oak openings. June.

968. *P. subulata* L. Ground or Moss Pink.

Dry banks and hillsides, especially along railroad cuts. May. Frequent in and about the City. Corollas rarely white. Common in cultivation.

HYDROPHYLACEAE. WATERLEAF FAMILY.

HYDROPHYLLUM L. WATERLEAF.

969. *H. appendiculatum* Michx.

Moist hillsides and rich woods; frequent. June.

970. *H. Canadense* L.

Frequent in moist rich woods. Mid-June-Mid-July.

971. *H. Virginicum* L.

Frequent in rich moist woods. Last of May-June.

BORAGINACEAE. BORAGE FAMILY.

CYNOGLOSSUM L. HOUND'S-TONGUE.

972. *C. officinale* L. Common Hound's-Tongue.

Waysides and waste places; frequent. Summer.

ECHINOSPERMUM Swartz. STICKSEED.*Lappula* Moench.973. **E. LAPPULA** Lehm.

Roadsides and waste places; common. Summer.

974. **E. Virginicum** Lehm. Beggar's Lice.

Frequent in low woods. Summer.

ECHIUM L. VIPER'S BUGLOSS.975. **E. vulgare** L. Blue-weed.

On dumping-ground near the Eagle Plaster Mills; scarce. Mid-June-July.

LITHOSPERMUM L. GROMWELL. PUCCOON.976. **L. arvense** L. Wheat-Thief. Red-root. Corn Gromwell.

Common in waste places. Summer.

977. **L. canescens** Lehm. Puccoon of the Indians.

Common in sandy soil. May.

978. **L. hirtum** Lehm.*L. Gmelini* (Michx.) Hitch.

Sandy fields and oak openings; frequent. Mid-May-July.

979. **L. latifolium** Michx.

Frequent on the edges of woods. Mid-May-June.

MERTENSIA Roth. LUNGWORT.980. **M. Virginica** DC. Virginian Cowslip. Lungwort. Blue Bells.

Rich alluvial soil; scarce. May.

Scattered along Plaster Creek from Kalamazoo Ave. to Grand River (R. E. Matteson); occasional along Grand River; Wm. Cook's woods, Sec. 36, Byron (S.).

MYOSOTIS L. SCORPION-GRASS. FORGET-ME-NOT.**M. PALUSTRIS** L.

Escaped from gardens. Summer.

East St. between Wealthy Ave. and Sherman St., City (R. E. Matteson).

SYMPHYTUM L. COMFREY.

981. *S. officinale* L. Common Comfrey.

Escaped from gardens. June-July.

Barn premises of Riverside Farm, Ada; roadside along the west line of Sec. 22, Wright; near the Lower Swing Bridge.

VERBENACEAE. VERVAIN FAMILY.

LIPPIA L.

982. *L. lanceolata* Michx. Fog-fruit.

Alluvial soil; infrequent. July-Aug.

Along Grand River, south of the Eagle Plaster Mills (O.H.); Grandville; Plainfield Village; Reed's Lake (M.&C.). Rare in the State.

VERBENA L. VERVAIN.

983. *V. bracteosa* Michx.

In un-tilled soil in and about the City; well distributed, but nowhere abundant. Summer.

984. *V. hastata* L. Blue Vervain.

Common in low ground. July-Sept.

An intermediate form, a hybrid between this and *V. urticaefolia*, is found; the spikes are interrupted as in the latter; the flowers are pink or lavender.

985. *V. stricta* Vent.

Abundant in dumping-ground along Silver Creek, west of Jefferson Ave., City (M.&C.), 1896. July-Aug.

This is the only station mentioned in the State.

986. *V. urticaefolia* L. White Vervain.

Common in low ground. July-Sept.

LABIATAE. MINT FAMILY.

BLEPHILIA Raf.

987. *B. ciliata* Raf.

Frequent in light sandy soil. June.

Well distributed and frequent in the eastern part of this district. Scarce in the State.

988. **B. hirsuta** Benth.

Low woods and along streams; common. July.

It reaches its northern limits in the Grand River Valley.

CALAIMNTHA Moench. CALAMINT.*Clinopodium* L.989. **C. Clinopodium** Benth. Basil.*C. vulgare* L.

In dry fields and thickets; frequent. July.

COLLINSONIA L. HORSE-BALM.990. **C. Canadensis** L. Stone-root. Rich-weed.

In rich woods. Aug.

Mr. Gillons' woods, Sec. 25, Byron; also along the highway between Secs. 30 and 31, Byron.

HEDEOMA Pers. PENNYROYAL.991. **H. pulegioides** Pers. American Pennyroyal.

Sandy fields; local. Aug.

Along Carlton Creek; Berger Creek, near Hogadone Road; Burton Ave. and Buchanan St., South Grand Rapids(O.H.).

HYSSOPUS L. HYSSOP.992. **H. officinalis** L.

Escaped from cultivation; rare. Summer.

In the northern part of Paris (A.J.Pieters), 1897.

LEONURUS L. MOTHERWORT.993. **L. CARDIACA** L. Common Motherwort.

Common in waste ground. July-Sept.

LOPHANTHUS Benth. GIANT HYSSOP.*Agastache* Clayt.994. **L. nepetoides** Benth.

Frequent in shaded alluvial soil. Aug.

995. **L. scrophulariaefolius** Benth.

In springy places; local. Aug.

Along the D. G. H. & M. Ry, about two miles east of Ada Village; Page Creek.

LYCOPUS L. WATER HOEHOUND.

996. *L. rubellus* Moench.

Low ground; frequent. July-Sept.

997. *L. sinuatus* Ell.

L. Americanus Muhl.

In marshes; common. July-Sept.

998. *L. Virginicus* L. Bugle-weed.

Common in moist soil. Mid-July-Sept.

MARRUBIUM L. HOEHOUND.

999. *M. vulgare* L. Common Horehound.

Escaped from cultivation; frequent. Summer.

MENTHA L. MINT.

1000. *M. Canadensis* L. Wild Mint.

Meadows and low ground; common. Last of July-Sept.

1001. *M. piperita* L. Peppermint.

Common in wet ground along creeks. Cultivated at present in the southern part of Byron for oil. Aug.-Sept.

1002. *M. rotundifolia* (L.) Huds.

Abundant along the Alpine Gravel Road, opposite the Farm of Wm. C. Dowling, Sec. 13, Alpine, where it has maintained itself for over 33 years. This is the only station known in the State. Its uses are those of peppermint and spearmint, and it has about the same kind of oil.

1003. *M. viridis* L. Spearmint.

M. spicata L.

Roadsides, escaped from cultivation; frequent. Aug.-Sept.

MONARDA L. HORSE-MINT.

1004. *M. didyma* L. Bee-Balm. Oswego Tea.

July 3, 1893, a few plants were taken from a small patch, in

moist shaded groand, along the highway between Secs. 2 and 3, Byron (F.).

1005. **M. fistulosa** L. Wild Bergamot.

Light soil, edges of fields, and thickets; common. July-Aug.

1006. **M. punctata** L. Horse-Mint.

In dry, sterile soil, especially hills and bluffs; frequent. Aug.

Pine Hill; sand bluffs along Grand River; Rouge River; Hogadone Creek; Crooked Lake; about the Lakes in central Cannon; Vergennes.

NEPETA L. CAT-MINT.

1007. **N. CATARIA** L. Catnip.

Common in waste places near dwellings. July-Sept.

1008. **N. GLECHOMA** Benth. Ground Ivy. Gill-over-the-Ground.

Glecomia hederacea L.

Escaped from cultivation; occasional. May-Aug.

PHYSOSTEGIA Benth. FALSE DRAGON-HEAD.

1009. **P. Virginiana** Benth.

In wet ground; abundant and local. Aug.

On both banks of Grand River, near the Lower Swing Bridge (B.E.L.). Forms with white corollas grow with the others(O.H.).

PRUNELLA L. SELF-HEAL.

1010. **P. vulgaris** L. Common Self-heal or Heal-all.

Common in fields. July-Aug.

PYCNANTHEMUM Michx. MOUNTAIN MINT. BASIL.

Koellia Moench.

1011. **P. lanceolatum** Pursh.

K. Virginiana (L.) MacM.

Common in low ground. Aug.-Sept.

SALVIA L. SAGE.

S. azurea grandiflora Benth.

S. Pitcheri Torr.

There are two clumps on Godfrey Ave., City, near the C. & W.

M. Ry. (M.&C.). July-Aug.

Probably introduced from the South-West.

SCUTELLARIA L. SKULLCAP.

1012. **S. galericulata** L.

Wet soil; common. July-Aug.

1013. **S. lateriflora** L. Mad-dog Skulleaf.

Common in low ground. July-Aug.

STACHYS L. HEDGE-NETTLE.

1014. **S. aspera** Michx.

In wet shaded ground; frequent. July-Aug.

1015. **S. aspera glabra** Gray.

S. tenuifolia Willd.

Found growing with the preceding; occasional. July-Aug.

1016. **S. hyssopifolia** Michx.

In moist ground. July.

N. shore of Crooked Lake; Bostwick Lake; abundant about Little Bostwick Lake. Rare in the State.

1017. **S. palustris** L.

Common in low shaded ground. July-Aug.

TEUCRIUM L. GERMANDER.

1018. **T. Canadense** L. American Germander. Wood Sage.

Low woods and thickets; frequent. July-Aug.

SOLANACEAE. NIGHTSHADE FAMILY.

DATURA L. JAMESTOWN-WEED. THORN-APPLE.

1019. **D. STRAMONIUM** L. Common Stramonium, or Thorn-Apple.

Untilled ground; not abundant. July-Sept.

Along the highway between Secs. 7 and 14, Walker(Roy Tucker); roadside between Secs. 1 and 12, Alpine.

1020. **D. Tatula** L. Purple Thorn-Apple.

A coarse weed in rich soil; common. July-Sept.

The seeds of both species are poisonous.

LYCIUM L. MATRIMONY-VINE.

1021. *L. vulgare* Dunal.

Occasionally escaped from gardens. Summer.

Introduced by the pioneer settlers.

PHYSALIS L. GROUND CHERRY.

1022. *P. heterophylla* Nees. (P. *Virginiana* Mill.)

In light soil; our most common species. Summer.

1023. *P. heterophylla ambigua* (Gray) Rydberg.(P. *Virginiana ambigua* Gray.)

Sandy soil. Summer.

Frequent in fields south of Burton Ave.

1024. *P. heterophylla nyctaginea* (Dunal) Rydberg.

In dry soil. Summer.

Corner of Jefferson Ave. and Burton Ave., City (O.H.).

1025. *P. Virginiana* Mill.

Dry sandy soil; common. July-Aug.

This species has been called *P. lanceolata* Michx, which is not known to occur in Michigan.1026. *P. Virginiana vulgaris* Rydberg.

In sterile soil about Crooked Lake (O.H.). Summer.

SOLANUM L. NIGHTSHADE.

1027. *S. Carolinense* L. Horse-Nettle.

Dry soil. July-Sept.

Along the G. R. & I. Ry., south of Fisher Station; edge of a little marsh on East St., near Plaster Creek (M.&C.); bank of Grand River at Wallin's Tannery, City; Soft Water Lake. Introduced from the South.

1028. *S. Dulcamara* L. Bittersweet.

Roadsides, thickets, and swamps; common. Summer.

Base of stem woody, a climbing or straggling plant, 3-10 feet high. White flowered forms grow with the purple, with leaves and stems very pubescent.

1029. **S. nigrum** L. Common Nightshade.

Moist soil; common. July-Sept.

1030. **S. rostratum** Dunal.

Waste places. July-Aug.

Soft Water Lake (O.H.); G. R. & I. Ry., near Fifth Ave., City (M.&C.); in Plainfield Village it has persisted since 1896 (H.W. Hyser). Introduced from the West, and is the original food of the Colorado potato-beetle.

SCROPHULARIACEAE. FIGWORT FAMILY.

CASTILLEJA Mutis. PAINTED-CUP.

1031. **C. coccinea** Spreng. Scarlet Painted-Cup.

In moist ground; formerly frequent, becoming scarce. May.

At Lamberton Lake the floral bracts vary from scarlet to yellow (O.H.).

CHELONE L. SNAKE-HEAD. TURTLE-HEAD.

1032. **C. glabra** L.

Low ground and banks of streams; frequent. Aug.-Sept.

COLLINSIA Nutt.

1033. **C. verna** Nutt.

Moist woods; abundant and local. May.

Ross Station (S); along Grand River at the following stations: Ada Village (Miss Birdie Bennett); Annadale Farm, Sec. 5, Wyoming (Miss Anna A. Rindge); south of the Lower Swing Bridge (E.G. Matter); one mile above Plainfield Village (Mrs. Mary Orth). A beautiful spring annual with blue and white party-colored flowers occurring in rich moist woodlands.

GERARDIA L.

1034. **G. flava** L. Downy False Foxglove.

Dasytoma flava (L.) Wood.

Frequent on hillsides and banks in open, dry woods. July-Aug.

1035. **G. Pedicularia** L.*Dasystoma Pedicularia* (L.) Benth.

Oak openings; frequent. Last of July–Aug.

1036. **G. purpurea** L. Purple Gerardia.

Moist sandy ground. Aug.–Sept.

Crooked Lake. It is found on the shores of the Great Lakes, but rare in the interior of the State.

1037. **G. purpurea paupercula** Gray.

Moist sandy soil of lake margins and river banks; frequent. Aug.–Sept.

1038. **G. quercifolia** Pursh. Smooth False Foxglove.*Dasystoma Virginica* (L.) Britton.

Frequent in oak openings. July–Aug.

ILYSANTHES Raf.1039. **I. riparia** Raf. False Pimpernel.*I. gratioloides* (L.) Benth.

In wet ground. July–Aug.

Pine Island Lake; Bostwick Lake.

LINARIA Juss. TOAD-FLAX.1040. **L. Canadensis** Dumont.

Dry sterile soil in shaded places; unfrequent. Mid-May–June Shores and hillsides in the Lambertton Lake and Crooked Lake regions; Little Bostwick Lake; bluffs along the Upper River Road. Abundant at these stations.

1041. **L. VULGARIS** Mill. Ramsted. Butter and Eggs.*L. Linaria* (L.) Karst.

Fields and waysides; common. Mid-June–Sept.

MELAMPYRUM L. COW-WHEAT.1042. **M. Americanum** Michx.*M. lineare* Lam.

In dry woods and thickets; frequent. June–July.

MIMULUS L. MONKEY-FLOWER.

1043. **M. ringens** L.

In marshes and along streams; common. July-Aug.

M. Jamesii Torr. may be looked for in spring brooklets.

PEDICULARIS L. LOUSEWORT.

1044. **P. Canadensis** L. Common Lousewort. Wood Betony.

Common in open, moist woodlands. May.

1045. **P. lanceolata** Michx.

Springy bogs and marshes; frequent. Mid-Aug.-Mid-Sept.

PENTSTEMON Soland. BEARD-TONGUE.

1046. **P. laevigatus** Soland.

P. Pentstemon (L.) Britton.

A few plants were found in a field south of Reed's Lake, July, 1894 (Mrs. Hattie M. Bailey Pieters).

1047. **P. laevigatus** Digitalis Gray.

P. Digitalis (Sweet) Nutt.

In a wheatfield on the bank of Lamberton Creek, west of the Plainfield Gravel Road, July, 1899 (R.N. Wolcott). Probably introduced in clover seed.

1048. **P. pubescens** Soland.

P. hirsutus (L.) Willd.

Common in light soil. June-July.

SCROPHULARIA L. FIGWORT.

1049. **S. leporella** Bicknell.

In rich soil; frequent. June-July.

1050. **S. nodosa** Marylandica Gray.

In woods and thickets; frequent. July-Aug.

SYNTHYRIS Benth.

Wulfenia Jacq.

1051. **S. Houghtoniana** Benth.

Oak openings; occasional. Last of May-June.

Lamberton Lake region; Knapp Road between Coit Ave. and Plainfield Ave. (S.O.L.); Pine Hill; Plaster Creek at Madison Ave.; Belmont. Its range in the State is north-west from Manchester in Washtenaw County to Barry County, thence to Ionia and Kent Counties.

VERBASCUM L. MULLEIN.

1052. **V. BLATTARIA L.** Moth Mullein.

Untilled fields and roadsides; occasional. July-Aug.

Flowers yellow or white. These colors are constant and generally all in a patch have the same color. Yellow flowered forms are the more frequent.

1053. **V. THAPSUS L.** Common Mullein.

Roadsides and fields; common. July-Sept.

VERONICA L. SPEEDWELL.

1054. **V. AMERICANA Schwein.** American Brooklime.

In brooklets and moist places; common. June-July.

1055. **V. ANAGALLIS L.** Water Speedwell.

V. Anagallis-aquatica L.

In springs and brooks; frequent. Aug.

1056. **V. ARvensis L.** Corn Speedwell.

Common in waste or cultivated ground. May-June.

1057. **V. LATIFOLIA L.**

Escaped from cultivation and plentiful at the corner of Peach Ave. and the Alpine Gravel Road (S.O.L.). June-July.

1058. **V. PEGREGRINA L.** Neckweed. Purslane Speedwell.

Common in moist soil. May-June.

1059. **V. SERPYLLIFOLIA L.** Thyme-leaved Speedwell.

Lawns and fields; common. Summer.

Flowers white or blue. *V. scutellata* L. may be looked for in swamps.

1060. **V. VIRGINICA L.** Culver's-root. Culver's Physic.

Leptandra Virginica (L.) Nutt.

Common in open shaded places. July-Aug.

LENTIBULARIACEAE. BLADDERWORT FAMILY.

UTRICULARIA L. BLADDERWORT.

1061. *U. cornuta* Michx.

In wet sand; occasional. Mid-June-July.

S. shore of Lamberton Lake (S.); Button Lake (Lotan Read); Saddle-Bag Swamp (O.H.); Little Bostwick Lake; Clear Lake; Mud Lake, Plainfield.

1062. *U. gibba* L.

In shallow water on the borders of lakes; local. July-Aug.

S. E. shore of Button Lake (M. & C.); Mud Lake, Plainfield. Rare in the State.

1063. *U. intermedia* Hayne.

In shallow water; scarce. June-Mid-Sept.

Shore of Lamberton Lake, 1889 (S.); Button Lake, 1897 (M. & C.); arm of Lamberton Lake marsh, 1899 (S.O.L.); Mud Lake, Plainfield; edges of the pool in Orchid Swamp, 1895 (O.H.). Infrequent in the State.

1064. *U. minor* L. Smaller Bladderwort.

In shallow water; rare. June-Mid-July.

S. shore of Lamberton Lake and the arm of Lamberton Lake marsh, where it grows with *U. intermedia* (S.O.L.). Rare in the State.1065. *U. resupinata* B. D. Greene.

Abundant in sand, in shallow water on the margin of Little Bostwick Lake. July-Aug.

1066. *U. vulgaris* L. Greater Bladderwort.

Ponds and slow streams; common. July-Aug.

OROBANCHACEAE. BROOM-RAPE FAMILY.

APHYLLON Mitch. NAKED BROOM-RAPE.

Thalesia Raf.1067. *A. uniflorum* Gray. One-flowered Cancer-root.

In oak openings; scarce. Mid-May.

Diamond St. woods, City (S.O.L.); Plaster Creek bluffs (M. & C.); bluffs along the Upper River Road (Mrs. Mary B. Fallass); woods west of the D.G.H. & M. Ry. Junction (Charles McCarty).

CONOPHOLIS Wallr. SQUAW-ROOT. CANCER-ROOT.

1068. **C. Americana** Wallr.

Rich moist woodlands; occasional. May-June.

Woods south of Reed's Lake; Mill Creek woods; Burton Ave. Swamp; woods of V. Harrington, Sec. 2, Walker; East St. Pinery; woods along the Thornapple River; woods of S. B. Smith, Sec. 14, Grand Rapids; woods of Mrs. Maria Williams, Sec. 4, Paris; north addition to John Ball Park, City.

EPIPHEGUS Nutt. BEECH-DROPS. CANCER-ROOT.

Leptatumnum Raf.

1069. **E. Virginiana** Bart.

Frequent in beech woods. Aug.-Sept.

PHRYMACEAE LOPSEED FAMILY.

PHRYMA L. LOPSEED.

1070. **P. Leptostachya** L.

In moist woods and thickets; frequent. July-Aug.

PLANTAGINACEAE. PLANTAIN FAMILY.

PLANTAGO L. PLANTAIN. RIBWORT.

1071. **P. aristata** Michx.

Dry gravelly soil; local. Summer.

East of Madison Ave., near the D. G. R. & W. Ry. (M. & C.); near the Soldiers' Home, on east side of the Comstock Riverside Addition plat. Introduced from the West.

1072. **P. LANCEOLATA** L. Ribgrass. English Plantain.

Fields and waysides; common. Summer.

1073. **P. major** L. Common Plantain.

Waysides and about dwellings. July-Sept.

Less common than *P. Rugeii*.

1074. **P. Rugelii** Decaisne.

Found growing with *P. major* and often mistaken for it. July-Sept.

RUBIACEAE. MADDER FAMILY.

CEPHALANTHUS L. BUTTON-BUSH.

1075. **C. occidentalis** L.

A low shrub; common about swamps. July-Aug.

GALIUM L. BEDSTRAW. CLEAVERS.

1076. **G. Aparine** L. Cleavers. Goose-Grass.

Dry woods; common. May.

1077. **G. asprellum** Michx. Rough Bedstraw.

Swamps and boggy ground; common. July-Oct.

1078. **G. boreale** L. Northern Bedstraw.

Common. June-July.

1079. **G. circaezans** Michx. Wild Liquorice.

In dry woods; frequent. July-Aug.

1080. **G. Claytoni** Michx.

In moist soil, especially about lake margins; frequent. Mid-June-July.

1081. **G. lanceolatum** Torr. Wild Liquorice.

Frequent in rich woods. June-July.

1082. **G. pilosum** Ait.

Dry banks; frequent. July.

1083. **G. tinctorium** L. (G. trifidum latifolium Torr.)

Frequent in low woods. June-July.

1084. **G. trifidum** L. Small Bedstraw.

Bogs and marshes; common. June-July.

The variety *pusillum* Gray is included in the species.

1085. **G. triflorum** Michx. Sweet-scented Bedstraw.

Woods; frequent. July.

Emits a pleasant odor in drying.

HOUSTONIA L.

1086. **H. longifolia** Gaertn.

Dry soil; occasional. June.

Bluffs of Plaster Creek; bluffs of Thornapple River; Vergennes; Plainfield; Cannon.

MITCHELLA L. PARTRIDGE-BERRY.

1087. **M. repens** L.

Prefers beech, maple, or woods with conifers; common. Mid-June-July.

CAPRIFOLIACEAE. HONEYSUCKLE FAMILY.

DIERVILLA Moench. BUSH HONEYSUCKLE.

1088. **D. trifida** Moench.

D. Diervilla (L.) MacM.

Dry woods or banks; frequent. Last of May-June.

LINNAEA L. TWIN-FLOWER.

1089. **L. borealis** L.

Plentiful under tamaracks on the east side of Mud Lake, Wright. June.

LONICERA L. HONEYSUCKLE. WOODBINE.

1090. **L. ciliata** Muhl. Fly-Honeysuckle.

Frequent in moist woods. May.

1091. **L. glauca** Hill.

L. dioica L.

Usually grows in wet ground; occasional. Mid-May-Mid-June.

L. Douglasii Hook. (*L. glaucescens* Rydberg), formerly included in *L. glauca*, is not so tall; the leaves are somewhat hairy beneath. It may be looked for in thickets and on hillsides in this locality.

1092. **L. oblongifolia** Hook. Swamp Fly-Honeysuckle.

Cold swamps. June.

Cedar Swamp (Wadsworth Part); plentiful about Mud Lake, Wright. (Miss Jessie Brown).

SAMBUCUS L. ELDER.

1093. *S. Canadensis* L. Common Elder.

Fields and roadsides; common. July.

"It follows settlements." The berries with red stems are preferred to those with green stems for culinary purposes.

1094. *S. racemosa* L. Red-berried Elder.*S. pubens* Michx.

Common along stump fences on pine land, frequent in moist woods. May.

SYMPHORICARPOS Juss. SNOWBERRY.

The species mentioned under this genus are indigenous in the northern part of the State. They were common in cultivation about the homes of the pioneer settlers, and are not infrequent now about old dwellings and roadsides.

1095. *S. occidentalis* Hook. Wolfberry.

Flowers in July, the fruit ripens and persists through autumn.

1096. *S. racemosus* Michx. Snowberry.

Flowers in July, fruit ripe in autumn.

S. paniciflorus Robbins is indigenous in Ionia Co., and may be looked for here on hillsides under pines.1097. *S. vulgaris* Michx. Indian Currant. Coral-berry.*S. Symphoricarpos* (L.) MaeM.

Flowers in July, the fruit persists after the leaves have fallen.

TRIOSTEUM L. HORSE-GENTIAN. FEVER-WORT.

1098. *T. perfoliatum* L.

Open woods and copses. Mid-May-Mid-June.

Widely scattered, but well distributed.

VIBURNUM L. ARROW-WOOD. LAURESTINUS.

1099. *V. acerifolium* L. Arrow-wood. Dockmackie.

Dry wooded banks and hillsides; frequent. Mid-May-Mid-June.

1100. *V. cassinoides* L. Withe-rod.

Sphagnous swamps; infrequent. First of June.

Big Marsh; Mud Lake, Plainfield; Mud Lake, Walker; Sec. 1, Tallmadge.

1101. *V. Lentago* L. Sweet Viburnum. Sheep-berry.
Low woods and marshes; common. Mid-May-June.

1102. *V. Opulus* L. Cranberry-tree.
Cold swamps; occasional. May.
Well distributed, but scattered.

1103. *V. pubescens* Pursh. Downy Arrow-Wood.
Banks and hillsides; common. Mid-May-Mid-June.

VALERIANACEAE. VALERIAN FAMILY.

VALERIANA L. VALERIAN.

1104. *V. sylvatica* Banks.
Sphagnous swamps; frequent. Mid-May-Mid-June.

VALERIANELLA Poll. CORN SALAD. LAMB-LETTUCE.

1105. *V. chenopodifolia* DC.
There is a small patch just north of Plaster Creek, between the M.C.Ry. and the G.R. & I. Ry. (John Van Splunter), June, 1897.

DIPSACEAE. TEASEL FAMILY.

DIPSACUS L. TEASEL.

1106. *D. SYLVESTRIS* Mill. Wild Teasel.
Untilled ground; rare. July-Aug.
This species occurs on the Farm of George Slater along the highway on the north line of Sec. 15, Paris. A few plants have been growing at this station for some years (Robert Slater).

CUCURBITACEAE. GOURD FAMILY.

ECHINOCYSTIS Torr. & Gray. WILD BALSAM-APPLE. *Micromelis* Raf.

1107. *E. lobata* Torr. & Gray.
Alluvial soil; common. July-Aug.

CAMPANULACEAE. CAMPANULA FAMILY.

CAMPANULA L. BELLFLOWER.

1108. *C. Americana* L. Tall Bellflower.
Frequent in moist woodlands. July-Aug.

1109. *C. aparinoides* Pursh. Marsh Bellflower.
Grassy marshes and bogs; common. July-Aug.

1110. *C. naupunctoloides* L.
Well established at Wallin's Tannery, City(O.H.). July-Aug.

1111. *C. rotundifolia* L. Harebell.
Common on shaded banks and hillsides. June-Sept.

LOBELIA L.

1112. *L. cardinalis* L. Cardinal-flower.
Common in wet soil. Aug.
Near Nason's Saw-Mill on Grand River, plants with almost pure white corollas grew with the red (S.O.L.).

1113. *L. inflata* L. Indian Tobacco.
In fields and thickets; infrequent. July-Sept.
West Bridge St. Ferry; See. 49, Vergennes; S. E. shore of Reed's Lake; Byron Center; See. 29, Caledonia.

1114. *L. Kalmii* L.
Wet soil, edges of lakes, and marshes; frequent. Mid-July-Mid-Sept.

1115. *L. spicata* Lam.
In dry, mostly sandy soil, or in meadows; frequent. July.

1116. *L. syphilitica* L. Great Lobelia.
Wet ground; abundant. Mid-July-Mid-Sept.
The color of the corolla varies from deep blue to white.

SPECULARIA Heist. VENUS' LOOKING-GLASS.

Legouzia Durand.

1117. *S. perfoliata* DC.
Dry gravelly soil; infrequent. June-July.

D. G. H. & M. Ry., east of the City (Miss Broome); John Ball Park, City, (Mrs. Mary B. Fallass); Lamberton Lake region; Sec. 29, Vergennes; hills along the G. R. & I. Ry., just west of the D. G. H. & M. Ry. Junction.

COMPOSITAE. COMPOSITE FAMILY.

ACHILLEA L. YARROW.

1118. *A. Millefolium* L. Common Yarrow or Milfoil.
Fields and roadsides; common. July–Oct.
Forms with rose-colored rays are occasional.

AMBROSIA L. RAGWEED.

1119. *A. artemisiaefolia* L. Roman Wormwood. Ragweed.
Common along highways. July–Oct.
Introduced from the West.

1120. *A. trifida* L. Great Ragweed.
Common in alluvial soil. July–Aug.

1121. *A. trifida integrifolia* Torr. & Gray.
Frequent with the type. July–Aug.

ANAPHALIS DC. EVERLASTING.

1122. *A. margaritacea* Benth. & Hook. Pearly Everlasting.
In fields; rare. Aug.–Sept.
South Grand Rapids (B.E.L.); North College Ave. and Sweet St., City, (S.O.L.); along the road running north from the D. G. H. & M. Ry. Bridge, near Saddle-Bag Swamp (O.H.).

ANTENNARIA Gaertn. EVERLASTING.

A. plantaginea R. Br. is the earlier and correct name for *A. plantaginifolia* Hook. It has recently been divided into several species; the following from this locality have been identified by Mr. M. L. Fernald:

1123. *A. Brainerdii* Fernald.
Clayey ground, near Reed's Lake. May.

1124. *A. fallax* Greene.

Light soil. May.

Woods along the D. G. H. & M. Ry. west of the Junction; hills about Burton Ave. Swamp.

1125. *A. Farwellii* Greene.

In sand or clay. May.

Black Hills; D. G. H. & M. Ry.; near West Bridge St. Ferry; Fourth St.; Plainfield Village.

1126. *A. neodioica* Greene.

Sandy soil. May.

Near West Bridge St. Ferry (Mrs. Mary B. Fallax); Hudsonville; near Reed's Lake.

1127. *A. neodioica attenuata* Fernald.

Collected along West Bridge St., near the Ferry. May.

1128. *A. plantaginea* R. Br.

In sandy or gravelly soil. May.

Along the Grandville Road; near West Bridge St. Ferry; Hudsonville; bluffs about Lamberton Lake; West Leonard St.

1129. *A. plantaginea petiolata* Fernald.

Pine and oak woods along the G. R. & I. Ry., just west of the D. G. H. & M. Ry. Junction. May.

ANTHEMIS L. CHAMOMILE.

1130. *A. arvensis* L. Corn Chamomile.

Abundant in a field along Buchanan St., north of Roe St., South Grand Rapids. Summer.

1131. *A. Coriifolia* L. May-weed. Dog-Fennel.

Along highways and waste places; common. July-Oct.

It followed pioneer settlements, and was very abundant along roadsides and in waste places in this vicinity from 1850 to about 1865 when ragweed became common.

ARCTIUM L. BURDOCK.

1132. *A. Lappa* L. Burdock.

Common in waste places. July-Oct.

1133. *A. LAPPY MINUS* Gray.

Common. July-Oct.

ARTEMISIA L. WORMWOOD.

1134. *A. ABSINTHIUM* L. Common Wormwood.

Sparingly escaped from gardens. Aug.

1135. *A. biennis* Willd.

A roadside weed; spreading freely. Sept.

Introduced from the West.

1136. *A. caudata* Michx.

In sandy fields; common. Sept.-Oct.

ASTER L. STARWORT. ASTER.

1137. *A. azureus* Lindl.

In light sandy soil; frequent. Aug.-Sept.

1138. *A. cordifolius* L.

Common in woods and thickets. Sept.-Oct.

1139. *A. cordifolius polyccephalus* Porter.

In low ground; frequent. Aug.-Oct.

1140. *A. diffusus* Ait.

A. lateriflorus (L.) Britton.

In dry or moist soil; common and variable. Sept.-Oct.

1141. *A. divaricatus* L. (A. corymbosus Ait.)

In thickets. Mid-July-Aug.

South Grand Rapids (F.).

1142. *A. dumosus* L.

In sand; local. Sept.-Oct.

Crooked Lake; Bostwick Lake; Pine Island Lake.

1143. *A. ericoides* L.

Dry sterile soil; infrequent. Sept.-Oct.

North College Ave. and Sweet St., City (S.O.L.); Silver Lake; Bostwick Lake; Little Bostwick Lake.

1144. *A. junceus* Ait.

Sphagnous swamps; frequent. July, Sept.

Cedar Swamp; Burton Ave. Swamp; Mud Lake, Plainfield; Campan Lake, and elsewhere.

1145. *A. laevis* L.

Common on the edges of oak woods. Mid-Aug.-Oct.

1146. *A. macrophyllus* L.

Common in oak openings. Aug., Sept.

1147. *A. multiflorus* Ait.

Dry sandy soil; local. Sept.-Oct.

Abundant about Plainfield Village.

1148. *A. Novae-Angliae* L.

Frequent in moist ground. Sept.

1149. *A. paniculatus* Lam.

Common in marshes and along streams. Sept.-Oct.

Exceedingly variable.

1150. *A. puniceus* L.

Common in marshes. Sept.-Oct.

1151. *A. puniceus lucidulus* Gray.

Common in marshes. Sept.-Oct.

1152. *A. sagittifolius* Willd.

Common in dry soil. Aug.-Oct.

1153. *A. salicifolius* Ait.

In moist soil; frequent. Aug.

Pine Island Lake; Lamberton Lake region; Lower Swing Bridge; Campan Lake; Reed's Lake; McCords.

1154. *A. sericeus* Vent.

In sterile soil. Aug.-Sept.

Pine Hill; abundant in the woods of W. M. Snow, S.E. $\frac{1}{4}$ of the N. W. $\frac{1}{4}$ of Sec. 15, Cascade.

1155. *A. Shortii* Hook.

Along the edges of woods in the south addition to John Ball Park, City. Rare. Sept.-Oct.

1156. **A. Tradescanti** L.

Low ground; frequent. Sept.-Oct.

Cedar Smamp; Lamberton Lake; Burton Ave. Swamp; Campau Lake; Reed's Lake, and elsewhere.

1157. **A. umbellatus** Mill.

Doellingeria umbellata (Mill.) Nees.

Common in moist places. Aug.-Sept.

1158. **A. undulatus** L.

Dry ground; occasional. Sept.-Oct.

Abundant in the southern part of Cannon; along the Cascade Gravel Road.

1159. **A. vimineus** Lam.

In low ground; occasional. Sept.-Oct.

Lamberton Lake region; near Caledonia Village; Burton Ave. Swamp.

BIDENS L. BUR-MARIGOLD.

1160. **B. Beckii** Torr. Water Marigold.

Abundant in the west end of Reed's Lake. Aug.

1161. **B. cernua** L. Smaller Bur-Marigold.

Wet places; common. Sept.-Oct.

1162. **B. chrysanthemoides** Michx. Larger Bur-Marigold.

B. laevis (L.) B.S.P.

Low ground; common. Aug.-Sept.

1163. **B. connata** Muhl. Swamp Beggar-ticks.

Common in low ground. Aug.-Sept.

1164. **B. connata comosa** Gray.

In low ground. Aug.-Sept.

1165. **B. discoidea** (Torr. & Gray.) Britton.

(*Coreopsis discoidea* Torr. & Gray.)

In wet soil; frequent. July-Oct.

1166. **B. frondosa** L. Common Beggar-ticks. Stick-tight.

Low ground and waste-places; common. Aug.-Sept.

CHRYSANTHEMUM L. OX-EYE DAISY.

1167. *C. BALSAMITA* L. Mint-Geranium. Costmary.

Escaped to roadsides and persistent near dwellings and old gardens; occasional. July-Sept.

Locally called Rosemary, Sweetmary.

1168. *C. LECANTHEMUM* L. Ox-eye or White Daisy.

In pastures, meadows, and waste places; increasing. June-Oct. It has been established at Reed's Lake for 30 years or more.

CICHORIUM L. SCOURING-RAPE OR CHICORY.

1169. *C. INTYBUS* L.

Waysides and waste places; locally abundant. July-Sept.

Scattered along the Cascade Gravel Road; along Market St. and Elsworth Ave., City (S.O.L.); Caledonia Village (Mrs. Mary B. Fallass); Alpine Gravel Road, near Platte's Corners.

CNICUS L. COMMON OR PLUMED THISTLE.

Carduus L.

1170. *C. altissimus discolor* Gray.

C. discolor (Muhl.) Nutt.

Roadsides and meadows; occasional. Aug.-Sept.

1171. *C. ARVENSIS* Hoffm. Canada Thistle.

In fields and waste places; becoming too frequent. July-Sept.

1172. *C. LANCEOLATUS* Willd. Common Thistle.

Roadsides and fields; common. Aug.-Oct.

1173. *C. muticus* Pursh. Swamp Thistle.

Frequent in swamps. Aug.-Sept.

COREOPSIS L. TICKSEED.

1174. *C. lanceolata* L.

Dry sandy soil; local. Mid-June-Mid-July.

Bluffs at Plainfield Village; Belmont; Beal's Road and Clyde Park, near Burton Ave. Swamp (M.&C.); Plainfield, near the State Road in Cannon.

1175. *C. trichosperma tenuiloba* Gray.

Bidens trichosperma tenuiloba (Gray) Britton.

In marshes, often so abundant as to make them one mass of yellow in September.

1176. *C. tripteris* L. Tall Coreopsis.

Light soil in and about oak openings; occasional. Aug.

Vergennes; Cascade; Plainfield; Lamberton Lake region; Caledonia; Cannon.

1177. *C. verticillata* L.

Collected at Grand Rapids several years ago by Prof. C. F. Wheeler. Specimen in the M.A.C. Herbarium—destroyed by fire in 1890.

ECHINACEA Moench. PURPLE CONE-FLOWER.

Brauneria Neck.

1178. *E. purpurea* Moench.

The only plant ever found in this district was collected in a field near Butterworth Ave., Aug. 16, 1891, by Mrs. Delia Bailey Cobb. In the herbarium of Mrs. Hattie M. Bailey Pieters. Rare in the State.

ECHINOPS L.

E. SPHAEROCEPHALUS L. Great Globe-thistle.

Waste places; adventive. Aug.-Sept.

Butterworth Ave., near John Ball Park, City, 1896 (O.H.); Park Ave., near the "big ditch," City (Mrs. E. L. Sones); Upper River Road, near the Midland Plaster and Cement Mill; Fish Pond. Only one or two plants at any of these stations. It has been reported from one other locality in the State. A European plant introduced into the United States some years ago as a "bee plant."

ERECTITES Raf. FIREWEED.

1179. *E. praealta* Raf. (E. hieracifolia Raf.)

Especially common on new clearings. Aug.-Sept.

ERIGERON L. FLEABANE.

1180. *E. annuus* Pers. Daisy Fleabane. Sweet Scabious.
Fields; common. July-Oct.

1181. *E. bellidifolius* Muhl. Robin's Plantain.
E. pulchellus Michx.
Frequent on moist banks. Mid-May-Mid-June.

1182. *E. Canadensis* L. Horse-weed. Butter-weed.
Leptilon Canadense (L.) Britton.
Fields and waste places; common. Aug.-Oct.

1183. *E. Philadelphicus* L. Common Fleabane.
Common in moist grassy places. Mid-June-July.

1184. *E. strigosus* Muhl. Daisy Fleabane.
E. ramosus (Walt.) B.S.P.
Fields; common. July-Oct.

EUPATORIUM L. THOROUGHWORT.

1185. *E. ageratoides* L. White Snake-root.
Frequent in moist woods. Aug.-Sept.

1186. *E. perfoliatum* L. Thoroughwort. Boneset.
Common in low ground. Aug.-Sept.

1187. *E. purpureum* L. Joe-Pye Weed. Trumpet-Weed.
Low ground; common and variable. Aug.-Sept.

GNAPHALIUM L. CUDWEED.

1188. *G. decurrens* Ives. Everlasting.
Common in untilled fields. Aug.-Sept.

1189. *G. obtusifolium* L. (*G. polyccephalum* Michx.)
In fields and open woodlands; common. Sept.

1190. *G. uliginosum* L. Low Cudweed.
Frequent on the edges of streams, in clayey soil. July-Sept.

GRINDELIA Willd.

G. squarrosa Dunal.

Farm of J. E. Phillips, See. 19, Paris, where it has maintained

itself for several years; probably introduced from the South-West, through refuse from the Felt-Boot Factory (Allen Phillips).

HELENIUM L. SNEEZE-WEED.

1191. *H. autumnale* L.

Alluvial soil; frequent. Aug.-Sept.

HELIANTHUS L. SUNFLOWER.

H. annuus L. Common Sunflower.

Escaped from cultivation and persistently self-seeding for several years. July-Sept.

1192. *H. decapetalus* L.

Low woods; frequent. Mid-Aug.-Sept.

1193. *H. divaricatus* L.

Dry woods and banks; common. Aug.-Sept.

1194. *H. giganteus* L.

Low ground; common and variable. Aug.-Sept.

1195. *H. occidentalis* Riddell.

In and about oak openings; frequent and well distributed. Aug.-Sept.

1196. *H. petiolaris* Nutt.

Untilled ground. July-Oct.

Escaped from cultivation, and persistently self-seeding since 1893, on East Bridge St., near Ransom St., City; Farm of J. E. Phillips, Sec. 19, Paris; probably introduced through refuse from the Felt-Boot Factory. Native on the western prairies.

1197. *H. strumosus* L.

Woods and shaded ground; common. Mid-Aug.-Sept.

1198. *H. tuberosus* L. Jerusalem Artichoke.

Escaped from cultivation and becoming frequent. Aug.-Sept.

HIERACIUM L. HAWKWEED.

1199. *H. Canadense* Michx.

Common in dry woods and thickets. Mid-July-Sept.

1200. **H. Gronovii** L. Hairy Hawkweed.
Dry soil in John Ball Park, City (O.H.). Rare. July-Aug.

1201. **H. longipilum** Torr. Long-bearded Hawkweed.
In dry sandy soil; scarce. Mid-July-Aug.
Along the road running midway through Sec. 6, Plainfield; Sec. 3, Georgetown; near Fisher Station (R. E. Matteson); woods of W. M. Snow, S. E. $\frac{1}{4}$ of the N. W. $\frac{1}{4}$ of Sec. 15, Cascade.

1202. **H. scabrum** Michx.
Common in dry woods. Mid-July-Sept.

1203. **H. venosum** L. Rattlesnake-weed.
In dry woods and thickets; frequent. June-July.
Forms occur which do not have purple veined root leaves.

INULA L. ELECAMPAINE.

1204. **I. HELIUM** L. Elecampane.
Occasional along roadsides where it has escaped from cultivation. July-Aug.
It has maintained itself fifty years or more on the N. W. $\frac{1}{4}$ of Sec. 30, Vergennes.

KRIGIA Schreb. DWARF DANDELION.
Adopogon Neck.

1205. **K. amplexicaulis** Nutt.
A. *Virginicum* (L.) Kuntze.
Moist hillsides or banks on oak land; frequent. June.

1206. **K. Virginica** Willd.
A. *Carolinianum* (Walt.) Britton.
Dry sandy soil in open, oak woods; frequent. June.

KUHNIA L.

1207. **K. eupatorioides** L.
Dry soil; locally abundant. Mid-July-Aug.
Plainfield Village; hillsides near the Eagle Plaster Mills; Ada Village; Plaster Creek; Lamberton Lake region; Crooked Lake region. Infrequent in the State.

LACTUCA L. LETTUCE.

1208. **L. Canadensis** L. Wild Lettuce.

Common in rich soil. July-Sept.

1209. **L. hirsuta** Muhl.

Dry soil; scarce. Mid-June-Sept.

Bluffs along Hogadone Road, near Hogadone Creek.

1210. **L. leucophaea** Gray.*L. spicata* (Lam.) Hitch.

Common in moist soil. Aug.-Sept.

1211. **L. SCARIOLA** L. Prickly Lettuce.

Waste places; frequent. Mid-July-Aug.

It first appeared in this country on a dumping-ground of an Atlantic seaport. In three years it had reached Michigan, and in eight years, the Pacific coast.

LEPACHYS Raf.

Ratibida Raf.1212. **L. pinnata** Torr. & Gray.

Dry soil, especially along streams; occasional. Mid-July-Aug.

Thornapple River; Rouge River; Grand River. Abundant at these stations.

LIATRIS Schreb. BUTTON SNAKEROOT. BLAZING-STAR.

Laciniaria Hill.1213. **L. cylindracea** Michx.

Sterile soil; well distributed, but scattered. Aug.

1214. **L. scariosa** Willd. Blazing-Star.

Dry soil; common. Aug.

1215. **L. spicata** Willd.

Marshy ground; frequent. Aug.

ONOPORDON L. Cotton or Scotch Thistle.

1216. **O. ACANTHUM** L.

Sterile soil of old fields; not abundant. June-Sept.

Collected in the south part of the City in 1872 (Prof. C.F. Wheeler); fields at the corner of Lake Ave. and Paekard St.,

City, 1896 (Frank Wurzburg); fields at the corner of George St. and East Fuller St., near College Ave., City, 1896 (M. & C.). It is not known to occur elsewhere in the State.

POLYMNIA L. LEAF-CUP.

1217. *P. Canadensis* L.

Low woods; local. Last of June-Oct.

Abundant in the Soldiers' Home woods; Hilton's Lake; along the D. G. H. & M. Ry. between Ada Village and Lowell; Cedar Swamp (Weatherwax Part).

1218. *P. Uvedalia* L.

Rich moist woods in John Ball Park, City. Aug.

Its occurrence in the State has only one previous mention.

PRENANTHES Vaill. RATTLESNAKE-ROOT.

Nabalus Cass.

1219. *P. alba* L. White Lettuce. Rattlesnake-root.

Borders of rich woods. Aug.-Sept.

Abundant and variable, often 6 feet high.

1220. *P. altissima* L.

Frequent in moist, oak woods. Aug.

1221. *P. racemosa* Michx.

In moist, open places along the D. G. H. & M. Ry., east of the City (B.Q. Hazlewood). Scarce. Aug.-Sept.

RUDBECKIA L. CONE-FLOWER.

1222. *R. hirta* L. Black Eyed Susan.

Dry soil; common. July-Aug.

Occasionally the rays are reddish-brown.

"Native only on the western prairies. Widely distributed in the East as a weed."

1223. *R. laciniata* L.

Frequent in springy places. Aug.-Sept.

1224. *R. speciosa* Wender.

Meadows; frequent. Aug.-Sept.

SENECIO L. GROUNDSSEL.

1225. **S. atriplicifolius** Hook. (Cacalia atriplicifolia L.)
Mesadenia atriplicifolia (L.) Raf.

Frequent on the margins of oak openings. Aug.

1226. **S. aureus** L. Golden Ragwort. Squaw-weed.
 Open swamps; frequent and variable. Mid-May-Mid-June.

1227. **S. aureus obovatus** Torr. & Gray.
 Dry soil; common. Mid-May-Mid-June.

SILPHIUM L. ROSIN-WEED.

1228. **S. terebinthinaceum** Jacq.

In oak openings; local. Aug.-Sept.

D. G. H. & M. Ry. at East St.; bank of Grand River below the Lower Swing Bridge; north side of Fisk Lake (O.H.); Silver Creek at Jefferson Ave., City. Infrequent in the State.

SOLIDAGO L. GOLDEN-ROD.

1229. **S. bicolor** L.

Dry banks; local. Sept.

Hogadone Creek region (O.H.). It is only known to occur at two other stations in the State.

1230. **S. bicolor concolor** Torr. & Gray.

S. hispida Muhl.

Dry woods and fields; frequent. Last of Aug.-Sept.

1231. **S. caesia** L.

Common in rich woods. Aug.-Sept.

1232. **S. caesia axillaris** Gray.

Found with the type. Aug.-Sept.

1233. **S. Canadensis** L.

Common and variable. Sept.-Oct.

1234. **S. juncea** Ait.

Not uncommon in open places. Mid-July-first of Aug.

1235. **S. lanceolata** L.

Euthamia graminifolia (L.) Nutt.

Common in wet places. Aug.-Sept.



1236. *S. latifolia* L.*S. flexuosa* L.

Frequent in moist woods. Aug.-Sept.

1237. *S. neglecta* Torr. & Gray.

In sphagnum swamps; infrequent. Sept.

D. G. H. & M. Ry., east of City; Cedar Swamp; Chase Lake; See. 3, Cascade; Clear Lake; Lamberton Lake region.

1238. *S. nemoralis* Ait.

Common in light soil. Aug.-Sept.

1239. *S. Ohioensis* Riddell.

In marshes and springy places; infrequent. Mid-Aug.-Sept.

D. G. H. & M. Ry., east of City; Walden Lake; Lamberton Lake; Button Lake; See. 31, Plainfield; Campan Lake.

1240. *S. patula* Michx.

Common in swampy ground. Aug.

1241. *S. Riddellii* Frank.

In wet ground; occasional. Mid-Aug.-Sept.

Orehill Swamp; along the railroads, south of Burton Ave.; below the Eagle Plaster Mills, along the L. S. & M. S. Ry.; South Division St., near Plaster Creek; Carrier Creek and North Union St., City; Lamberton Lake; Stafford Lake.

1242. *S. rigida* L.

Dry banks; occasional. Aug.

Bluffs at Plainfield Village; along the bluffs of Rouge River; Pine Hill; Pine Island Lake; Vergennes; Grand Rapids. Infrequent in the State.

1243. *S. rigidiuscula* (Torr. & Gray) Porter.*(S. speciosa angustata* Gray.)

In dry sandy soil; frequent in oak openings. Mid-July-Mid-Aug. The first golden-rod to flower. Its occurrence is known in but one other locality in the State.

1244. *S. rugosa* Mill.

Moist soil; common. Last of Aug.-Sept.

1245. *S. serotina* Ait.

Borders of woods; frequent. Last of July-Aug.

1246. *S. serotina gigantea* Gray.

Found with the type. Last of July-Aug.

1247. *S. speciosa* Nutt.

Light soil, in and about oak openings; common. Sept.

1248. *S. tenuifolia* Pursh.

Euthamia Caroliniana (L.) Greene.

In sandy soil, Pine Island Lake at the "picnic grounds"; found also in Blendon. Not abundant. Aug.

1249. *S. uliginosa* Nutt.

In swamps; occasional. Aug.

Button Lake; Clear Lake.

1250. *S. ulmifolia* Muhl.

Grows on the edges of the "sand-pit" in John Ball Park, City.

Rare. Aug.-Sept.

SONCHUS L. Sow-Thistle.

1251. *S. ASPER* Hill. Spiny-leaved Sow-Thistle.

Waste places, in rich ground; frequent. July-Sept.

1252. *S. OLERACEUS* L. Common Sow-Thistle.

Fields and waste places; frequent. July-Sept.

TANACETUM L. Tansy.

1253. *T. VULGARE* L. Tansy.

Escaped from cultivation; frequent near dwellings. July-Sept.

TARAXACUM Hall. Dandelion.

1254. *T. OFFICINALE* Weber. Common Dandelion.

T. Taraxacum (L.) Karst.

Fields, everywhere. May-Oct.

"Distributed as a weed in all civilized parts of the world."

TRAGOPOGON L. Goat's-Bread.

1255. *T. PORRIFOLIUS* L. Salsify. Vegetable Oyster.

Escaped from cultivation to roadsides; becoming frequent. Summer.

1256. *T. pratensis* L. Goat's-beard.

Along waysides and in untilled soil; spreading freely. June-July.

VERBESINA L.

V. encelioides (Cav.) Gray. Golden Crownbeard.

This species has appeared since 1892 on the Farm of J. E. Phillips, Sec. 49, Paris. It was introduced through refuse from the Felt-Boot Factory, where the wool used was procured from New Mexico and the South-West (Allen Phillips). The plant is an annual and is reproduced through self-sown seed. It retains all of its original characteristics, even the color of its foliage.

In 1892, seeds from these plants were sent to the Botanical Garden of M.A.C., where it still maintains itself. Besides this species, several others, unquestionably introduced in the same manner, are found on the Farm of Mr. Phillips; as, *Centaura virgata*, *Erysimum asperum*, *Grindelia squarrosa*, *Helianthus petiolaris*, and *Sisymbrium Irio*.

To note the plants which appear and become established on the premises of those using the refuse from this Factory, would be of general interest and importance. Of late, considerable of the material used in the Factory has been imported from India, Persia, and Russia.

VERNONIA Schreb. IRON-WEED.

1257. *V. altissima* Nutt.

V. gigantea (Walt.) Britton.

In moist soil; frequent. Aug.-Mid-Sept.

1258. *V. altissima grandiflora* Gray.

V. Drummondii Shuttlw.

River banks and low ground; frequent. Aug.-Mid-Sept.

1259. *V. glauca* L. Britton.

On light soil along the roadside between West Bridge St. and Stafford Lake. Aug.

XANTHIUM L. COCKLEBUR. CLOTHUR.

1260. *X. Canadense* Mill.

Common along river banks and in waste places. Aug.-Oct.



Over the tangled slopes where the hazels spring,
The witches cast charms, I am told,
And the rays of sunshine must twist and cling
Till stiffened by snow and cold.

Each little brown pod is the home of an elf
Which peeps from its window in glee;
While I stand bewitched in a spell myself,
They leap out with a laugh at me.

M. B. F.

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